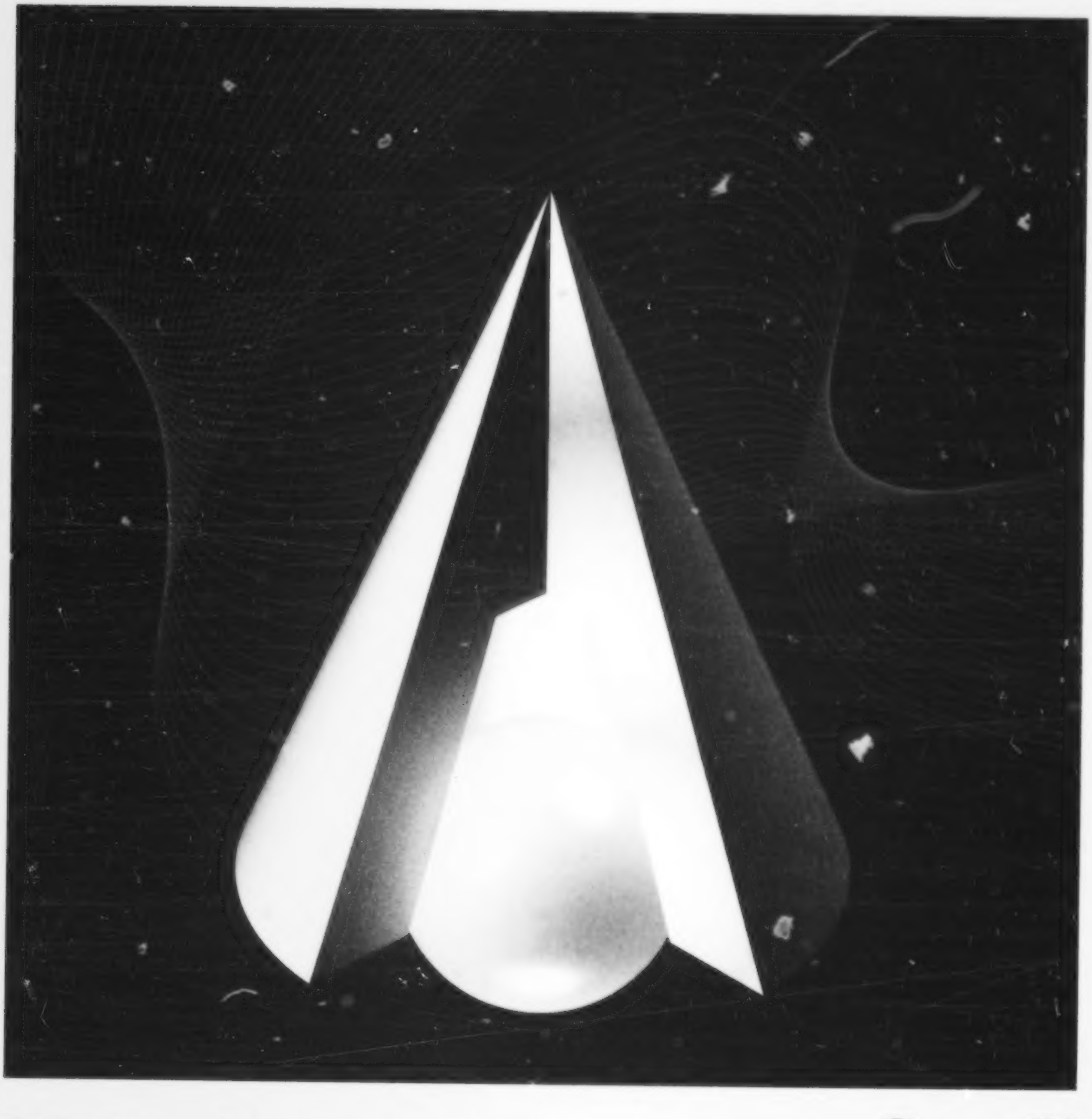
# Research Paper Series

**Analytical Studies**

## *Postsecondary Field of Study and the Canadian Labour Market Outcomes of Immigrants and Non-Immigrants*

**By Arthur Sweetman and Stephan McBride**

**No. 233**



Statistics Canada Statistique Canada

Canada

## ANALYTICAL STUDIES RESEARCH PAPER SERIES

The Analytical Studies Research Paper Series provides for the circulation, on a pre-publication basis, of research conducted by Branch staff, visiting Fellows and academic associates. The Research Paper Series is intended to stimulate discussion on a variety of topics including labour, business firm dynamics, pensions, agriculture, mortality, language, immigration, statistical computing and simulation. Readers of the series are encouraged to contact the authors with comments, criticisms and suggestions. A list of titles appears inside the back cover of this paper.

Papers in the series are distributed to Statistics Canada Regional Offices, provincial statistical focal points, research institutes, and specialty libraries. These papers can be downloaded from the Internet at *www.statcan.ca*.

Publications Review Committee
Analytical Studies, Statistics Canada
24th Floor, R.H. Coats Building
Ottawa, Ontario, K1A 0T6
(613) 951-1804

105-00653/

# Postsecondary Field of Study and the Canadian Labour Market Outcomes of Immigrants and Non-Immigrants

by

**Arthur Sweetman* and Stephan McBride****

**11F0019 No. 233**
**ISSN: 1200-5223**
**ISBN: 0-662-38186-6**

Business and Labour Market Analysis
24 -E, R.H. Coats Building, Ottawa, K1A 0T6
Labour Market Policy Research Unit, Strategic Policy and Planning Branch
Human Resources and Skills Development Canada
*Queen's University, School of Policy Studies
**Stanford University
Facsimile Number: (613) 951-5403
Email: sweetman@qsilver.queensu.ca

**October 2004**

This research has been supported by Human Resources and Skills Development Canada's Labour Market Policy Research Unit. Statistics Canada generously provided access to the census data used in the analysis. The paper is, of course, solely the responsibility of the authors and all opinions are theirs alone. This paper represents the views of the author and does not necessarily reflect the opinions of Statistics Canada.

Published by authority of the Minister responsible for Statistics Canada

© Minister of Industry, 2004

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without prior written permission from Licence Services, Marketing Division, Statistics Canada, Ottawa, Ontario, Canada K1A 0T6.

*Aussi disponible en français*

## *Table of Contents*

Executive Summary .......... 4

I. Introduction .......... 8

II. Data .......... 10

III.1 Descriptive Statistics Across Levels of Education .......... 11
  III.2 Descriptive Statistics by Field of Study .......... 15

IV. Regression Analysis of Earnings by Field of Study .......... 21
  IV.1 Bachelor's Degree Holders .......... 22
  IV.2 College Degree Certificate and Diploma Holders .......... 27
  IV.3 Master's Degree Holders .......... 29
  IV.4 Predicted Annual Earnings by Field .......... 31

V. Economic Integration by Broad Field of Study .......... 35

VI. Oaxaca-Blinder Decompositions .......... 43

VII. Conclusion .......... 46

References: .......... 68

## Abstract

Education in Canada's federal system for economic (skilled) class immigrant selection is treated as if it is homogeneous and only differs in quantity. In contrast, some provinces differentiate based on postsecondary field of study. This study finds large economic implications of field of study. It explores the issue for each sex, and for two subgroups of immigrants depending upon whether their education was obtained in Canada or elsewhere. Overall, large differences in the distribution of fields of study are observed between both immigrant groups and the Canadian born. For all groups there are also substantial differences in earnings and social benefit receipt across fields. On average, individuals in high earnings fields, but at lower levels of education, have greater earnings than those with higher levels of education in low earnings fields. This suggests that viewing education strictly as a quantity, and ranking a college diploma as worth fewer points than a university degree in the immigration points system, ignores important and systematic heterogeneity across fields.

Field of study is not observed to explain much of the earnings difference between immigrants and the Canadian born, though it is relatively more important for males than females in doing so. Interestingly, while there are a few exceptions, a general pattern is observed whereby the differences between high- and low-earning fields are not as large for immigrants as for the Canadian born. Similarly, social assistance receipt has smaller variance across fields for immigrants than for the Canadian born. Nevertheless, substantial inter-field differences are observed for each immigrant group.

**Keywords:** Immigration, postsecondary field of study, earnings, unemployment insurance

## Executive Summary

Canada's federal system for economic (skilled) class immigrants assigns points to immigrant candidates for, among other characteristics, the level of education attained. Education, however, is treated as if it is homogeneous; applicants may have different quantities, but no consideration is given to how education might vary along other dimensions. This might be an appropriate approach for several reasons. For example, if those other dimensions are hard to quantify, if they have few economic implications, or if selecting immigrants on these criteria might have adverse impacts. Nevertheless, outside of the immigration system, education is considered to vary along several dimensions. It might, for example, be differentiated according to the language of instruction. This paper focuses on one particular distinguishing feature of postsecondary education that is both easy to quantify, and will be seen to have important economic implications: it normally involves specialization. That is, students usually focus on a particular field of study.

Though the federal government does not currently consider field of study, Québec's point system does take it into account in a limited way by assigning bonus points for fields that are considered to be valuable in the labour market and in short supply. That is, Québec's "liste des formations privilégiées" contains a relatively short and very specific list of both college, and university undergraduate and graduate, fields of study that are of value in its economy. A related, but broader approach has recently been put forward by the province of British Columbia. The Minister of Community, Aboriginal and Women's Services, which oversees the provincial immigrant nominee program, announced that employers will be allowed to nominate individuals in pure and applied sciences, computer sciences, and computer, electronic, electrical and mechanical engineering for that program. Part of the focus of this program is to facilitate the immigration of international students with degrees from Canadian universities in these subjects.[1] These initiatives suggest that understanding the impact of field of study on Canadian labour market outcomes is increasingly important.

The impact of postsecondary field of study is a subject worth understanding since it impacts the labour market outcomes and integration of immigrants to Canada. It is noteworthy that field of study and occupation are quite different measures. While graduates from some fields of study largely work in particular occupations (or industries), many fields produce students who work in a very wide range of occupations, and even the mostly highly occupation-specific fields have a large fraction of graduates working in fields other than the most common one. Further, occupation can be transitory. This study, therefore, explores and documents the Canadian labour market outcomes of immigrants as a function of their postsecondary field of study without regard for their current occupation.

Overall, the analysis finds that postsecondary field of study is clearly an important determinant of earnings for both the Canadian born and immigrant populations. In fact, graduates from highly paid fields at the college level have better labour market outcomes, on average, than similar graduates who hold Bachelor's degrees in some fields. Postsecondary field of study appears to be a strong predictor of labour market success for immigrants and the Canadian born alike. Although we only present results from the 1996 census, a similar analysis was conducted for the 1986 and 1991 censuses, and the pattern of results was consistent.

---

[1] BC Ministry of Community, Aboriginal and Women's Services *Backgrounder* and *News Release* (Dec.10, 2002).

Turning to the details of the analysis, first, to facilitate the analysis conceptually, the working age population under study was initially divided into 18 sub-populations identified by: sex (female and male), immigrant classification (those born in Canada, Canadian educated immigrants, and foreign educated immigrants), and highest postsecondary degree (college, bachelor's and master's). Since there are 54 fields of study, although not all apply to each level of education, these subpopulations reduce the parsimony of the study, but are required to facilitate a meaningful analysis of a heterogeneous issue. Further, to provide the context for the exploration of postsecondary field of study, initial descriptive statistics looking across levels of education are provided for each of the six sex-immigrant/Canadian-born groups. The most striking general observation across all levels of education is that, for both sexes, Canadian educated immigrants have extremely good labour market outcomes in terms of earnings, hours per week and weeks per year. They are better than those for the Canadian born, and far better than those for foreign educated immigrants. In part, this is because they have high levels of education. In contrast, immigrants without Canadian education have fewer years of education, are less likely to have had work in the year and have lower earnings.

There are also very sizable differences in demographic characteristics across the six sex-immigrant/Canadian-born groups. For both sexes, the foreign educated are the oldest of the groups, and they are almost alone in having a sizable fraction of individuals who speak neither of Canada's official languages. Further, a high fraction of those who speak neither language have less than a high school education. On other dimensions, individuals from both immigrant groups (Canadian and foreign educated) are dramatically more likely to be a visible minority and live in an urban area.

Initial descriptive statistics by field of study for the three selected levels of education show all three groups to have quite different distributions across field of study. Especially for females, but also for males, the Canadian-born group is much more likely, two to three times, to have a teaching degree. Immigrants, especially immigrant females compared to Canadian-born females, are much more likely to be in engineering and applied science, or in math and physical sciences. In general, female immigrants are more likely to enter "traditionally male" disciplines that are science or math related than are Canadian-born females (for example, economics comprises 1.34% of female Canadian-born bachelor's degrees, but 3.86 and 3.24 of the foreign and Canadian educated immigrant ones).

Simple descriptive statistics of mean salaries by field show many differences within levels of education that are in the order of 30% to 50% for the Canadian born. For example, male graduates with a bachelor's degree in English receive, on average, $35,389 per year, whereas mechanical engineers receive $55,987. Females, on average, have lower earnings, but the gaps are similar: fine art graduates earn $21,335, whereas those in mathematics receive $35,259 (mechanical engineering is $42,168). Canadian educated immigrants have comparable, or higher, earnings to the Canadian born, but those of the foreign educated are lower. Further, the field of study differentials within the foreign educated subgroup are not as large as those within the other two subgroups, that is, the Canadian-born and the Canadian-educated immigrants.

At the bachelor's level, the statistical regressions reinforce the observation that the differences between fields are not as large for immigrants, especially for the foreign educated, as they are for the Canadian born. This is not to say that no field differences exist, or that the pattern is perfectly "smooth", but that there is a general tendency for fields with positive premia for the Canadian born to have a reduction in that premium observed for the immigrant subsample (though the premia remain substantial).

For college graduates there are far fewer differences in field of study premia between the Canadian-born and immigrant populations. The premia by field are, however, broadly similar with the more science and technology oriented fields having greater earnings along with those in business, law and related fields. At the master's level the pattern is quite different. Field of study premia are still observed, but foreign educated immigrants with a master's degree generally have positive premia relative to the Canadian born, especially in the lower paying arts, and literature and humanities, fields. This, once again, serves to reduce the differential between the high and low paying fields for the immigrant population relative to the Canadian-born one.

Predicted annual earnings based on the regressions allow comparisons across fields and levels of education for comparable individuals. They show, on average, individuals in high earnings fields, but at lower levels of education, have greater earnings than those with higher levels of education in low earnings fields. This suggests that viewing education strictly as a quantity, and ranking a college diploma as worth fewer points than a university degree in the immigration points system, ignores important and systematic heterogeneity across fields.

Economic integration profiles for the foreign educated are also presented. They graphically show how earnings increase with time in Canada, holding all other observable factors constant, for each field of study and level of education combination. Increased earnings with years since migration are observed for all fields at the bachelor's level, except perhaps fine and applied arts where there is little earnings progression with time in Canada. At the college level there is much less earnings progression as years since migration increase. This is in accord with age-earnings profiles in the literature, which show much smaller earnings increases with age for those with lower levels of education. It suggests that Canadian human capital accumulation is more prevalent for those with higher levels of education. The integration profiles for those with master's degrees are at least as steep as those with a bachelor's degree. However, the sample sizes are smaller and some of the plots are quite noisy, especially for the females.

A set of (Oaxaca-Blinder type) decompositions are used to compare each immigrant group to its Canadian-born counterpart. This analysis allows any earnings differences to be decomposed into differences in endowments, and the return on those endowments. It only addresses variables that are common to immigrants and the Canadian born, and only looks at the role of each characteristic in explaining differences between the groups. Field of study is treated as one type of endowment, and it explains at most about 14% of the difference in earnings in each pairwise comparison, and for most education groups it explains less. Age and language appear to be more important characteristics in economically differentiating each immigrant group from the Canadian born, especially for the females. For them, age is associated with up to 20% to 30% earnings differences, and language explains even more. However, for the females none of the observed characteristics explain as much as is left unexplained; this is an "immigrant effect" comprising factors not common to immigrants and the Canadian born, and/or reflects variables that are not measured in the census data. For males, field of study is associated with a slightly higher fraction of the variance in earnings than that for females, and while age and language are less important than for females, they remain more important than field of study in explaining earning differences between immigrants and the Canadian born. Note that this exercise measures the importance of the current distribution of field of study in explaining existing differences in earnings; it says nothing about what might occur if field of study were added to the points system in which case it would vary systematically with immigrant status.

Overall, there are sizeable earnings differences across fields of study, and these differences are observed for both immigrant groups and the Canadian born. While the magnitude of the differences are, in general, somewhat smaller for the immigrant groups, the approach adopted by British Columbia does select immigrants with fields of study that tend to have higher than average earnings.

An appendix to this study looks at annual Unemployment Insurance (Unemployment Insurance rather than Employment Insurance since the data is from 1995) and other government transfer (e.g., social assistance) receipt. Both immigrant groups are observed to receive less Unemployment Insurance than the Canadian born; and only foreign educated immigrant males receive more government transfers than their counterpart Canadian born group. In terms of patterns across fields of study, for the most part the results are mirror images of those for earnings. One exception to this is that those, especially the Canadian-born, with education degrees tend to receive very large Unemployment Insurance transfers. Overall, those fields with high earnings also have lower, or much lower, levels of benefit receipt from both Unemployment Insurance and other government transfers. Interestingly, the pattern seen for earnings whereby the variation across fields is larger for the Canadian born than for either immigrant group is also apparent for these benefits. While the pattern of differences across fields is present for all groups, it is generally larger for the Canadian born (though the study does document a few exceptions, for example females with college certificates in trades and technology).

This study does not look at the impact that a large scale field of study focussed immigration policy might have on those already working in the Canadian labour market (both Canadian born and previous entry cohorts of immigrants). This is an area that should be pursued in future research should the policy of targeting immigrants by field of study be pursued, especially if the fraction of immigrants in such fields grows substantially. Relatedly, it would be worth considering the social impacts of an immigrant pool comprised largely of individuals from a narrow set of fields of study.

If field of study were to be used in the points system, it would also be advantageous to collect data on field of study at landing. For the foreign educated, the field observed in the census must be the same as that when the immigrant arrived in Canada, but this need not be the case for those with Canadian education since the census only has information on the field of study for the highest level of education at the survey date. Of course, some of the Canadian educated arrive at a sufficiently young age that they would not have entered postsecondary prior to landing, but there remains a substantial group for whom the field recorded in the census may not reflect the one that would have been observed at entry. In a similar vein, for policy purposes with respect to the points system, field of study is only relevant for those who are assessed under that system. The census data employed in this study does not allow immigrant class to be observed; collecting information that allowed field to be identified along with immigrant category would be valuable.

# I. Introduction

Canada's federal system for economic (skilled) class immigrants assigns points to immigrant candidates for, among other characteristics, the level of education attained. Education, however, is treated as if it is homogeneous; applicants may have different quantities, but no consideration is given to how education might vary along other dimensions. This might be an appropriate approach for several reasons. For example, if those other dimensions are hard to quantify, if they have few economic implications, or if selecting immigrants on these criteria might have other adverse impacts (perhaps it would affect outcomes for the pre-existing population, both the Canadian born and earlier cohorts of immigrants). Nevertheless, outside of the immigration system, education is considered to vary along several dimensions. It might, for example, be of a particular "quality", where quality can be defined according to various metrics such as academic marks (e.g., grade point average), standardized test scores, or school or program reputation or ranking. For some purposes education might be differentiated according to the language of instruction. This paper focuses on one particular distinguishing feature of postsecondary education that is both easy to quantify, and will be seen to have important economic implications: it normally involves specialization. That is, students usually focus on a particular field of study.[2]

Though the federal government does not currently consider field of study, Québec's point system does take it into account in a limited way by assigning bonus points for fields that are considered to be valuable in the labour market and in short supply. That is, Québec's "liste des formations privilégiées" contains a relatively short and very specific list of both college, and university undergraduate and graduate, fields of study that are of value in its economy.[3] A related, but broader approach has recently been put forward by the province of British Columbia. The Minister of Community, Aboriginal and Women's Services, which oversees the provincial immigrant nominee program, announced that employers will be allowed to nominate individuals in pure and applied sciences, computer sciences, and computer, electronic, electrical and mechanical engineering for that program. Part of the focus of this program is to facilitate the immigration of international students who have taken Canadian programs in these subjects.[4] These initiatives suggest that understanding the impact of field of study on Canadian labour market outcomes is increasingly important.

The impact of postsecondary field of study is a subject worth understanding since it impacts the labour market outcomes and integration of immigrants to Canada. It is noteworthy that field of study and occupation are quite different measures. While graduates from some fields of study largely work in particular occupations (or industries), many fields produce students who work in a very wide range of occupations, and even the mostly highly occupation-specific fields have a large fraction of graduates working in fields other than the most common one. This study, therefore, explores and documents the Canadian labour market outcomes of immigrants as a function of their postsecondary field of study without regard for their current occupation.

---

[2] While many of the dimensions along which education varies may interact, exploring these interactions is beyond the scope of this study.

[3] This is broadly similar to the Australian model.

[4] BC Ministry of Community, Aboriginal and Women's Services *Backgrounder* and *News Release* (Dec.10, 2002).

Current work by Ferrer and Riddell (2002) looks at how immigrants integrate into the Canadian labour market as a function of their level of education, but it does not look at field of study. There is also research looking at selected labour market outcomes by field of study (e.g., Finnie 2001, and Côté and Sweetman 2000), but this literature does not look at immigrant status, or focus exclusively on the Canadian educated. Li (2001) explores the economic value of educational certifications/degrees (e.g., a bachelor's degree), not fields, but does use field of study as a statistical control (presented in his appendix table 1). However, he uses very coarse measures of field (e.g., social science including law is treated as a single field) and confounds their impact with current occupation and industry, which is appropriate given his objective, but does not allow one to focus on field of study in its own right.

Using census data, this study takes a highly disaggregated approach, looking at field of study by sex, level of education, and whether the education was completed in Canada or elsewhere. Unfortunately, we cannot distinguish between immigrant classes (e.g., economic, family and refugee) in these data, and this prevents us from focussing on the economic class that is assessed according to the points system for their labour market attributes. Nevertheless, we do observe important differences in earnings by field of study. Our most important findings include the following. First, all of the groups examined, and most importantly, immigrants and the Canadian born of the same sex and level of education, have quite different distributions of field of study. Immigrants are much less likely to have an education degree, and more likely to be in engineering and sciences. Secondly, while immigrants have substantial earnings differences across fields of study, they are observed to, for the most part, have smaller differences between the high and low earnings fields of study than the Canadian born. Third, field of study explains some of the immigrant- Canadian born earnings gap, but is only one factor among many and is no more important, and is much less important for the females, than other criteria such as age and language knowledge. This is not surprising given that field of study has not been a selection criteria to date. If it were made a selection criteria, then undoubtedly it would, by design, play a larger role in differentiating foreign educated immigrants from the Canadian born.

The format of this report is as follows. In section II the data employed will be described. Then, in section III, follow a series of sub-sections that look at different aspects of the broad issue under study. First descriptive statistics are used to position the postsecondary group under study in a broader set of educational categories. Second, descriptive statistics by detailed field of study are presented. Subsequently, in section IV, regressions are employed to explore the field of study impact controlling for the obvious and substantial differences across the subpopulations under study, and predictions are generated based on these regressions. Then, in section V, economic integration profiles are presented, and finally in section VI decompositions are utilized to gauge the overall impact of field of study and put it in perspective compared to other variables such as age. Section VII concludes. Also, an appendix is provided that looks at Unemployment Insurance and other government transfer receipt as a function of field of study.

## II. Data

For this project the only feasible data are the national censuses, and we use 1986, 1991, and 1996, 20% files. Most of the questions addressed in this study, however, are cross-sectional in nature and for those we present only the results from the 1996 census. Despite focussing on the 1996 results, we generated the same results for each census year in almost all cases. For the most part there are few substantive differences across census years. There is, for example, no clear trend in the premium to computer science across the three censuses. One important difference, however, was that the 1991 census reports earnings from 1990, which was the peak of the business cycle and immigrant workers fared relatively well, but this tended to affect the entire distribution and not the gaps between disciplines. When longitudinal questions are pursued, we employ all three censuses. Large samples are required to permit analysis of the detailed subpopulations of interest. Along with the common demographics, each census provides information on earnings and detailed major field of study for the highest level of postsecondary education.

The sample for analysis, unless otherwise stated in reference to a particular portion of the analysis, includes all individuals between the ages of twenty-five and sixty-five with no missing responses, not residing in the Territories, not attending school (though this is not available for the 1986 census), and who are permanent residents (only in 1996). Further, we drop those immigrants who landed in the first six months of the census year since we are not interested in the very strong short-run entry effect. In most analyses we take a random 33% sub-sample of the Canadian-born comparison group to facilitate estimation given the very large sample size. In the earnings portion of the analysis the sample is further restricted to those with positive wage and salary income, and positive weeks worked. Some previous analyses have made tighter restrictions, such as those with at least 40 weeks of work (e.g., Baker and Benjamin, 1994), however, for policy purposes the larger sample is more appropriate since it better reflects the relevant population. In the econometric regressions we further focus on individuals with exactly one of three educational attainments: college or trades certificate, bachelor's degree, or master's degree.

Looking at detailed fields is important since, as will be seen, there is substantial heterogeneity among the broad classifications frequently employed. For example, all of the social sciences, including law and business, is one grouping in the file most commonly employed. In contrast, postsecondary fields such as political science or economics need to be independently observed. Still, there are limits to disaggregation, and the four hundred and forty (440) different fields of study available are collapsed into fifty-four (54) primary fields, which are employed in our analysis. Of course, for those with Canadian education the field reported in the census data need not reflect an immigrant's field at the time of entry since the census only collects the field of the highest level of postsecondary at the census date. Several other benefits of this census file are the inclusion of information specific to the analyses of immigrant labour market outcomes, including: year-of-immigration, age-at-immigration, and characteristics of immigrants residing in the Atlantic Provinces (which are suppressed in the smaller files). The censuses, however, do not contain information on the year of degree completion, location of degree completion, or class of immigration. Another advantage of the census files is that they are commonly used to look at immigration issues. Thus, previous work using these data also provides a background against which to compare results from the current research.

Earnings are defined to be the sum of wage and salary income and non-negative self employment income. All values exceeding $250,000 are top-coded to this value; less than one percent of individuals are constrained by this. The log-earnings variable is the natural logarithm of earnings.

An immigrant is simply defined as someone not born in Canada, with the following minor edits. Individuals who listed a Canadian province as their location of birth, but also had responses for year-of-immigration and age-at-immigration were excluded from the analysis. Individuals who were coded as Canadian-born, but listed a foreign country of birth, and did not have a response for year-of-immigration or age-at-immigration were included, but their place of birth was changed to Canada. These individuals, approximately 0.005 of the sample, may be, for example, children of Canadian diplomats or military personnel serving overseas.

Total years of schooling is derived from three census questions: years of elementary and secondary schooling, years of university, and years of other postsecondary. Individuals with less than a complete year of postsecondary are coded to have obtained one half year of added schooling. Schooling is top coded at 24.[5]

Immigrants are separated into those with, and without, Canadian education. To be classified as Canadian educated, the individual's years of schooling plus five is at least as great as his / her age-at-arrival. All those with years of schooling greater than age at immigration clearly have some Canadian education. But, those with fewer years than their age of immigration may have had discontinuous schooling and have obtained some of their education in Canada. The classification algorithm is, therefore, conservative in that individuals who do not attend school continuously may be included in the foreign educated category despite having some Canadian education, and choosing age five is similarly conservative. Since the Canadian education likely results in more favourable outcomes in the Canadian labour market, coefficient estimates for the foreign educated will probably be somewhat better than they would be if we had better measures of where the education was obtained.

## III.1 Descriptive Statistics Across Levels of Education

Before looking at field of study, an initial set of descriptive statistics comparing levels of education is provided to place the study into context. Tables 1 and 2 are for females and males respectively. Panels A, B and C present an overview of, in sequence, the Canadian born, and the foreign and Canadian educated immigrant populations. These tables provide basic descriptive statistics by highest level of education. The upper portion of each panel comprises both those who work and those with zero earnings and weeks of work, while the working sub-sample at the bottom of each panel includes only those with positive earnings and weeks of work in the relevant year. Focussing first on the females, it is clear that many more immigrants are foreign, rather than Canadian, educated and that this group is older than the other two. The size differences between the two groups are greatest at the lower levels of education since Canadian educated immigrants tend to have higher educational credentials. In looking at the sample sizes, recall that the Canadian-born sample is a 33% random sub-sample of the file, whereas the two immigrant samples are 100% samples of the file or 20% of the population. Some substantial differences are visible among the three groups. The foreign educated are, on average, over four years older than the Canadian-born, and six and a half years older than the Canadian educated immigrants. There are also important differences by years of school: overall, it is just over 1.5 years greater for the Canadian educated immigrants, but over half a year less for those educated outside of Canada, compared to those born in the country. This is an interesting distinction since previous work, such as Borjas (1993), has combined the two immigrant groups and noted that immigrants, overall, have more years of schooling than the Canadian-born. The gap he observes seems to be attributable to the Canadian educated subgroup.

---

[5] No college recipients are affected by this restriction; one bachelor recipient is affected, and less than one percent of all master's degree recipients are influenced.

Table 1 - DESCRIPTIVE STATISTICS BY HIGHEST LEVEL OF EDUCATION - 1996 FEMALES

| | <HS | HS | Col | BA - | BA | BA + | MD | MA | PHD | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Canadian Born Females | | | | | | | | | | |
| Age | 46.17 | 41.55 | 40.52 | 45.93 | 38.62 | 41.55 | 37.91 | 42.15 | 44.65 | 42.59 |
| Years School | 9.48 | 12.24 | 13.50 | 15.22 | 17.09 | 17.62 | 20.19 | 19.05 | 22.05 | 12.48 |
| Urban (%) | 41.44 | 55.48 | 52.14 | 56.57 | 67.04 | 69.52 | 70.62 | 75.82 | 80.69 | 51.84 |
| Visminority (%) | 0.60 | 0.84 | 0.97 | 0.87 | 2.09 | 1.28 | 2.46 | 1.52 | 2.11 | 0.94 |
| No Work in Yr (%) | 46.24 | 24.00 | 16.75 | 18.19 | 9.83 | 9.89 | 2.66 | 7.28 | 5.88 | 27.03 |
| English (%) | 65.48 | 61.98 | 68.65 | 53.67 | 59.24 | 60.30 | 51.35 | 53.45 | 46.28 | 64.23 |
| French (%) | 23.11 | 18.97 | 13.18 | 18.10 | 9.23 | 6.10 | 5.49 | 6.07 | 2.48 | 17.27 |
| Bilingual (%) | 10.70 | 19.03 | 18.14 | 28.22 | 31.51 | 33.59 | 43.16 | 40.48 | 51.09 | 18.25 |
| Neither (%) | 0.71 | 0.01 | 0.02 | 0.01 | 0.02 | 0.02 | 0.00 | 0.00 | 0.15 | 0.24 |
| Earnings ($) | 7,884 | 15,211 | 18,063 | 22,911 | 29,672 | 34,069 | 71,229 | 40,009 | 46,604 | 16,137 |
| Working Sub-Sample | | | | | | | | | | |
| Hours | 26.96 | 29.60 | 29.90 | 30.61 | 32.46 | 34.20 | 39.73 | 35.06 | 38.45 | 29.75 |
| Weeks | 41.17 | 44.17 | 43.96 | 44.80 | 45.05 | 45.54 | 46.52 | 46.05 | 47.40 | 43.65 |
| Earnings | 16,413 | 21,078 | 22,940 | 29,246 | 33,653 | 38,518 | 73,361 | 44,360 | 49,846 | 23,508 |
| Frequency (%) | 31.96% | 24.77% | 27.53% | 2.62% | 9.41% | 1.52% | 0.25% | 1.78% | 0.17% | 100% |
| Number | 124,906 | 96,806 | 107,623 | 10,234 | 36,771 | 5,926 | 977 | 6,953 | 663 | 390,859 |
| Foreign Educated Immigrant Females | | | | | | | | | | |
| Age | 49.58 | 44.84 | 45.99 | 45.36 | 42.91 | 44.66 | 44.40 | 44.17 | 46.83 | 46.81 |
| Years School | 8.34 | 12.44 | 13.76 | 15.87 | 16.69 | 17.35 | 18.72 | 18.32 | 20.67 | 11.90 |
| Urban (%) | 87.87 | 87.15 | 83.99 | 86.84 | 88.75 | 88.24 | 86.27 | 88.85 | 87.87 | 86.92 |
| Visminority (%) | 47.99 | 54.85 | 44.94 | 58.70 | 66.66 | 50.59 | 49.44 | 42.10 | 31.35 | 50.53 |
| No Work in Yr (%) | 49.59 | 34.24 | 24.78 | 24.70 | 22.31 | 21.02 | 22.85 | 18.08 | 12.44 | 36.05 |
| English (%) | 68.87 | 82.51 | 85.76 | 79.60 | 82.59 | 71.62 | 77.06 | 75.85 | 65.16 | 77.30 |
| French (%) | 5.99 | 4.20 | 3.48 | 3.50 | 2.02 | 3.81 | 2.17 | 1.61 | 2.06 | 4.44 |
| Bilingual (%) | 4.02 | 7.22 | 8.84 | 14.10 | 13.70 | 22.83 | 17.90 | 21.64 | 32.58 | 7.90 |
| Neither (%) | 21.12 | 6.07 | 1.92 | 2.80 | 1.69 | 1.75 | 2.87 | 0.89 | 0.21 | 10.36 |
| Earnings ($) | 7,792 | 11,662 | 15,482 | 16,519 | 18,675 | 21,033 | 39,170 | 24,805 | 38,955 | 12,518 |
| Working Sub-Sample | | | | | | | | | | |
| Hours | 28.59 | 29.79 | 29.99 | 29.77 | 30.65 | 31.27 | 33.25 | 32.16 | 35.65 | 29.73 |
| Weeks | 42.54 | 43.23 | 43.79 | 43.39 | 43.31 | 42.59 | 43.02 | 43.55 | 45.28 | 43.19 |
| Earnings | 16,663 | 19,168 | 22,117 | 23,636 | 25,967 | 29,002 | 55,482 | 32,950 | 46,580 | 21,153 |
| Frequency (%) | 39.59% | 20.84% | 22.36% | 3.37% | 8.67% | 1.47% | 0.53% | 2.72% | 0.45% | 100% |
| Number | 86,492 | 45,542 | 48,863 | 7,363 | 18,946 | 3,206 | 1,151 | 5,946 | 973 | 218,482 |
| Canadian Educated Immigrant Females | | | | | | | | | | |
| Age | 42.96 | 40.03 | 39.85 | 42.44 | 38.08 | 41.39 | 38.80 | 42.59 | 45.30 | 40.46 |
| Years School | 10.50 | 12.66 | 14.11 | 16.29 | 17.33 | 17.97 | 20.39 | 19.43 | 22.05 | 14.10 |
| Urban (%) | 73.52 | 79.84 | 78.44 | 82.31 | 85.21 | 84.56 | 82.76 | 85.65 | 86.32 | 79.63 |
| Visminority (%) | 14.06 | 21.21 | 27.92 | 36.25 | 41.52 | 25.61 | 47.20 | 29.55 | 21.25 | 26.23 |
| No Work in Yr (%) | 32.43 | 19.89 | 15.30 | 14.76 | 10.07 | 8.97 | 4.50 | 7.96 | 4.66 | 18.09 |
| English (%) | 89.27 | 85.65 | 85.56 | 77.01 | 72.35 | 64.21 | 68.79 | 62.29 | 53.28 | 81.99 |
| French (%) | 1.88 | 1.29 | 1.31 | 1.09 | 1.03 | 1.03 | 1.09 | 0.89 | 0.73 | 1.32 |
| Bilingual (%) | 7.80 | 12.87 | 13.02 | 21.75 | 26.59 | 34.67 | 30.12 | 36.76 | 45.85 | 16.40 |
| Neither (%) | 1.06 | 0.20 | 0.12 | 0.15 | 0.04 | 0.09 | 0.00 | 0.06 | 0.15 | 0.29 |
| Earnings ($) | 12,589 | 17,776 | 19,779 | 24,439 | 29,255 | 34,340 | 72,221 | 40,131 | 47,879 | 21,468 |
| Working Sub-Sample | | | | | | | | | | |
| Hours | 29.63 | 30.50 | 30.59 | 32.51 | 32.99 | 34.24 | 40.17 | 34.65 | 38.83 | 31.39 |
| Weeks | 44.04 | 45.01 | 44.62 | 45.30 | 45.35 | 45.40 | 47.29 | 45.64 | 47.12 | 44.90 |
| Earnings | 19,930 | 23,309 | 24,569 | 30,001 | 33,708 | 38,824 | 76,939 | 44,671 | 51,726 | 27,522 |
| Frequency (%) | 18.41% | 24.50% | 29.80% | 3.12% | 15.76% | 2.63% | 0.75% | 4.22% | 0.81% | 100% |
| Number | 15,709 | 20,909 | 25,428 | 2,662 | 13,449 | 2,241 | 644 | 3,604 | 687 | 85,333 |

Source: 1996 Canadian census. Note the frequency and number of observations are for the entire sample, not the sub-sample.

There are several other striking differences across the three panels. Urbanization is dramatically greater among the immigrant population, especially the foreign educated sub-sample. From almost 52% for the Canadian born, urbanization rises to just under 80% for the Canadian educated immigrants, and to about 87% for immigrants educated outside of Canada. Further, visible minority status exhibits even larger gaps. Less than one percent of the Canadian-born women describe themselves as visible minorities, while 26% of the Canadian educated immigrants do, and this compares to 50% for those immigrants educated outside of Canada. The fraction of each group that worked zero weeks in the year preceding the census, a measure of labour force participation, has an interesting pattern across the three groups. Overall, in the right-most column, it is seen to be 27% for the Canadian-born, but lower, at 18% for Canadian educated immigrants, and higher, at 36% for foreign educated immigrants. These differences are nontrivial. The ranking is the same across all levels of education, but is much higher for those with lower levels of schooling. At the lowest level of schooling, less than a high school degree, the percentage not working is very similar for the Canadian-born and foreign educated immigrant groups.

Language currently spoken also has an interesting pattern. Immigrants, especially those educated in Canada, are much more likely to speak English, and much less likely to speak French, than the Canadian-born. Those educated elsewhere are much (about 40 times) more likely to speak neither language. Foreign educated immigrants with less than a high school degree are a notable group. They are massively more likely than any other subgroup to speak neither of Canada's official languages. Over 21% of this group fall into this category and it may hinder their labour market integration. Overall, almost all those who speak neither official language are in the foreign educated immigrant group. Undoubtedly, part of the reason that the foreign educated remain in this group, that is they do not pursue Canadian education, is related to their official language abilities (along with age and other characteristics).

Before turning to the sub-sample of those who worked in the previous year, which is equal to the total sample less the fraction who did not work in the previous year as indicated in the upper portion of each panel, it is worth looking at the earnings for the entire population. This number is an average of the earnings for those who work, and zeros for those without any earnings in the year. The number for those who work is of greater interest and is usually the focus of attention and policy, but, for immigration purposes, including the zeros is also of some interest. Canadian educated immigrants clearly have the highest earnings of the three groups for this sample. This arises both because they are more likely to work, and because (as will be seen, below) they have higher earnings when they do work. Looking at the working sub-populations, there are again some clear differences across the groups and levels of education. These differences are somewhat similar to those observed for the "no work in the previous year" variable. Canadian educated immigrants work more hours per week, more weeks per year and have higher annual earnings than either of the other groups. In contrast, foreign educated immigrants and the Canadian-born have very similar hours per week, and weeks per year, but the Canadian-born earned, on average, about $2350 more in 1995. Interestingly, there is a clear gradient in all three variables with education, and the differences across groups are most pronounced at the lower levels of education.

Scanning across educational levels for the three panels in table 1, it is clear that Canadian educated immigrants have higher levels of educational certification than either of the other two female groups. Further, conditional on a particular level of education (each distinct column), the Canadian educated immigrants and the Canadian born have generally similar outcomes, however the foreign educated immigrant females do worse in terms and earnings in each education category, especially at the higher levels of education.

Table 2 - DESCRIPTIVE STATISTICS BY HIGHEST LEVEL OF EDUCATION - 1996 Males

| | <HS | HS | Col | BA - | BA | BA + | MD | MA | PHD | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| **Canadian Born Males** | | | | | | | | | | |
| Age | 44.77 | 40.52 | 41.14 | 44.39 | 40.31 | 44.30 | 44.62 | 44.71 | 47.88 | 42.41 |
| Years School | 9.38 | 12.41 | 13.31 | 15.61 | 17.27 | 17.88 | 20.23 | 19.19 | 21.65 | 12.51 |
| Urban (%) | 39.88 | 55.79 | 50.29 | 62.64 | 69.95 | 68.74 | 64.49 | 73.07 | 75.95 | 51.00 |
| Visminority (%) | 0.71 | 1.03 | 0.85 | 1.08 | 1.94 | 1.28 | 2.40 | 1.22 | 1.18 | 0.97 |
| No Work in Yr (%) | 23.90 | 9.74 | 7.95 | 8.83 | 4.55 | 6.07 | 2.44 | 4.81 | 3.84 | 13.26 |
| English (%) | 66.58 | 62.26 | 68.40 | 53.37 | 61.86 | 59.78 | 59.30 | 56.35 | 51.91 | 65.09 |
| French (%) | 19.73 | 14.78 | 11.93 | 10.72 | 5.86 | 5.80 | 3.23 | 4.39 | 1.32 | 14.18 |
| Bilingual (%) | 13.19 | 22.94 | 19.63 | 35.92 | 32.28 | 34.40 | 37.47 | 39.24 | 46.77 | 20.54 |
| Neither (%) | 0.50 | 0.02 | 0.04 | 0.00 | 0.01 | 0.02 | 0.00 | 0.02 | 0.00 | 0.19 |
| Earnings ($) | 19,157 | 29,826 | 32,247 | 38,646 | 48,854 | 54,194 | 110,334 | 61,541 | 65,823 | 30,661 |
| Working Sub-Sample | | | | | | | | | | |
| Hours | 34.44 | 38.82 | 38.71 | 40.28 | 41.36 | 41.35 | 47.16 | 41.80 | 42.92 | 38.06 |
| Weeks | 41.56 | 45.90 | 45.54 | 47.20 | 48.13 | 48.28 | 48.91 | 48.50 | 49.06 | 44.98 |
| Earnings | 27,993 | 34,918 | 36,617 | 45,045 | 53,022 | 59,225 | 116,127 | 65,161 | 71,635 | 37,704 |
| Frequency (%) | 33.89% | 20.55% | 29.43% | 1.68% | 9.39% | 1.42% | 0.58% | 2.57% | 0.49% | 100% |
| Number | 134,380 | 81,489 | 116,701 | 6,648 | 37,212 | 5,621 | 2,292 | 10,202 | 1,954 | 396,499 |
| **Foreign Educated Immigrant Males** | | | | | | | | | | |
| Age | 48.93 | 44.35 | 48.08 | 46.54 | 45.09 | 46.68 | 48.72 | 46.23 | 49.24 | 47.33 |
| Years School | 8.64 | 12.58 | 13.66 | 16.27 | 16.99 | 17.75 | 19.33 | 18.66 | 20.80 | 12.73 |
| Urban (%) | 87.67 | 89.66 | 82.36 | 90.37 | 90.59 | 90.09 | 78.59 | 89.14 | 85.29 | 86.86 |
| Visminority (%) | 46.37 | 60.63 | 36.71 | 60.93 | 67.17 | 51.49 | 53.97 | 49.79 | 41.65 | 48.76 |
| No Work in Yr (%) | 25.30 | 15.92 | 13.41 | 14.14 | 11.61 | 11.49 | 10.52 | 9.05 | 7.07 | 17.24 |
| English (%) | 73.19 | 80.92 | 85.35 | 78.28 | 83.33 | 70.79 | 77.87 | 76.60 | 70.09 | 79.09 |
| French (%) | 5.56 | 3.91 | 3.31 | 3.04 | 1.65 | 2.72 | 1.40 | 1.42 | 1.36 | 3.83 |
| Bilingual (%) | 7.13 | 10.01 | 9.95 | 16.11 | 13.48 | 25.04 | 19.33 | 21.40 | 28.24 | 10.83 |
| Neither (%) | 14.12 | 5.16 | 1.40 | 2.57 | 1.55 | 1.45 | 1.40 | 0.59 | 0.31 | 6.25 |
| Earnings ($) | 18,349 | 21,451 | 28,192 | 27,284 | 32,703 | 34,978 | 85,287 | 41,472 | 54,913 | 26,100 |
| Working Sub-Sample | | | | | | | | | | |
| Hours | 35.23 | 37.09 | 38.11 | 37.80 | 38.27 | 38.38 | 46.11 | 39.92 | 41.47 | 37.36 |
| Weeks | 43.68 | 44.52 | 45.36 | 45.04 | 45.63 | 45.22 | 46.93 | 46.16 | 47.73 | 44.85 |
| Earnings | 26,739 | 27,865 | 35,131 | 34,798 | 40,413 | 43,466 | 100,996 | 49,544 | 63,070 | 34,304 |
| Frequency (%) | 33.39% | 16.31% | 27.80% | 3.09% | 9.90% | 1.94% | 1.07% | 4.51% | 2.00% | 100% |
| Number | 69,015 | 33,700 | 57,452 | 6,386 | 20,451 | 4,005 | 2,214 | 9,315 | 4,132 | 206,670 |
| **Canadian Educated Immigrant Males** | | | | | | | | | | |
| Age | 41.42 | 38.86 | 41.73 | 42.99 | 40.07 | 43.72 | 42.73 | 44.67 | 48.65 | 41.30 |
| Years School | 10.52 | 12.95 | 14.30 | 16.65 | 17.52 | 18.34 | 20.66 | 19.58 | 21.87 | 14.65 |
| Urban (%) | 73.54 | 80.57 | 76.26 | 84.35 | 85.79 | 82.48 | 79.59 | 83.57 | 83.30 | 79.18 |
| Visminority (%) | 17.36 | 26.02 | 22.37 | 33.78 | 37.98 | 26.94 | 42.79 | 29.13 | 26.10 | 25.94 |
| No Work in Yr (%) | 14.29 | 8.29 | 6.76 | 9.29 | 4.99 | 6.19 | 2.63 | 4.72 | 3.87 | 7.89 |
| English (%) | 88.79 | 84.27 | 86.69 | 77.73 | 75.43 | 69.79 | 72.35 | 67.45 | 61.29 | 82.15 |
| French (%) | 1.53 | 0.93 | 0.90 | 0.95 | 0.60 | 0.85 | 0.51 | 1.00 | 0.36 | 0.95 |
| Bilingual (%) | 8.94 | 14.62 | 12.32 | 21.21 | 23.92 | 29.23 | 27.14 | 31.51 | 38.31 | 16.69 |
| Neither (%) | 0.74 | 0.18 | 0.09 | 0.11 | 0.05 | 0.13 | 0.00 | 0.04 | 0.04 | 0.21 |
| Earnings ($) | 25,488 | 30,949 | 35,057 | 37,671 | 46,169 | 50,926 | 112,084 | 58,271 | 67,592 | 38,131 |
| Working Sub-Sample | | | | | | | | | | |
| Hours | 38.12 | 39.21 | 39.71 | 40.44 | 41.22 | 41.54 | 49.06 | 41.90 | 42.94 | 40.06 |
| Weeks | 45.09 | 46.63 | 46.76 | 46.95 | 47.85 | 48.16 | 48.64 | 48.34 | 49.25 | 46.89 |
| Earnings | 31,835 | 35,463 | 39,211 | 43,763 | 50,163 | 56,427 | 117,319 | 63,137 | 71,760 | 43,303 |
| Frequency (%) | 17.25% | 19.37% | 32.26% | 2.94% | 15.94% | 2.54% | 1.47% | 5.82% | 2.42% | 100% |
| Number | 16,027 | 17,999 | 29,975 | 2,735 | 14,812 | 2,357 | 1,367 | 5,404 | 2,245 | 92,921 |

Table 2 provides similar information from men as was provided above for women. There is, as has been observed previously (see, e.g., Benjamin, Gunderson and Riddell, 1998, for a textbook discussion of male-female earnings gaps), a difference in levels between men and women, with the former having greater weeks and hours of work, and greater annual earnings. Also, the males, especially the immigrant groups, are more likely to have a higher level of education. Comparing the frequency numbers on the bottom of tables 2 and 3, foreign educated immigrants have higher percentages of people in the highest three categories recorded, and somewhat fewer people at the high school and college levels. In contrast, the Canadian educated immigrants, perhaps because they are younger, are much less likely to have incomplete high school and more likely to have a university bachelor's or advanced degree. However, the broad patterns of demographics are similar, even if not exactly the same for the two sexes. The foreign educated are older than their Canadian-born counterparts, and the Canadian educated immigrants are younger. Both immigrant groups are more urbanized, and much more likely to be a visible minority. Once again, almost only the foreign educated speak neither official language, but the gap is not as large as it is for the women, because foreign educated males are more likely to speak an official language.

### *III.2 Descriptive Statistics by Field of Study*

The remainder of the analysis focuses mostly on field of study within three postsecondary education categories; those whose highest level of education is a college degree or certificate, a Bachelor's degree, or a Master's degree. We attempted to look at those with PhDs but the sample sizes were too small to permit individual fields to be studied reliably. We do include them in some portions of the analysis, but their inclusion is limited. Some of the descriptive statistics that follow also include an "other post-secondary" group, but we do not explore it in detail.

Descriptive statistics by field of study are presented in tables 3 through 6. Tables 3 and 4 look at, respectively, the distribution of individuals across fields and mean earnings by field for females in each of the three groups. Tables 5 and 6 do the same for males. All of the tables in this section are based on the sample of all individuals regardless of weeks of work or earnings in the previous year. Thus there are a number of individuals with zero earnings in each cell. This looks at a different question than that answered by looking only at workers (i.e., those with strictly positive earnings); in thinking about immigration policy, the entire population, regardless of work status, is relevant for thinking about issues such as poverty and tax payments. We focus on workers exclusively in the earnings regressions below, but on the entire sample in subsequently looking at Unemployment Insurance and other government transfers. Further, tables 1 and 2 contain very slightly larger samples than 3 through 6 since there is some nonresponse to the field of study question in the census. Also, the columns do not always sum to 100% since some cells contained too few individuals for reliable estimates to be provided and those cells are left blank.

TABLE 3

*COLUMN FREQUENCY %*

1996 CANADIAN CENSUS - FEMALES

| | Canadian Born | | | | Foreign Educated Immigrants | | | | Canadian Educated Immigrants | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Field | College | Bachelor | Master's | Othr PS | College | Bachelor | Master's | Othr PS | College | Bachelor | Master's | Othr PS |
| Education | | | | | | | | | | | | |
| Education | 8.35 | 30.65 | 27.09 | 38.74 | 7.81 | 15.19 | 17.70 | 19.16 | 7.51 | 16.73 | 21.13 | 26.69 |
| Fine & AppliedArts | | | | | | | | | | | | |
| FineArt | 10.55 | 3.69 | 3.32 | 2.76 | 10.73 | 4.32 | 3.94 | 3.78 | 12.70 | 3.89 | 3.33 | 3.43 |
| Literature & Humanities | | | | | | | | | | | | |
| History | | 1.91 | 1.45 | 0.90 | | 2.28 | 2.54 | 0.92 | | 2.14 | 2.55 | 0.99 |
| Media | 1.05 | 1.94 | 6.82 | 1.59 | 0.59 | 1.75 | 3.38 | 1.63 | 0.96 | 1.71 | 5.83 | 1.37 |
| English | 0.09 | 3.78 | 2.40 | 1.37 | 0.37 | 3.47 | 3.84 | 1.86 | 0.20 | 4.73 | 4.14 | 2.26 |
| French | 0.05 | 1.03 | 1.01 | 0.71 | - | 0.86 | 0.79 | 0.65 | 0.06 | 1.39 | 1.08 | 0.90 |
| Other Literature | 0.21 | 1.33 | 1.61 | 0.88 | 0.45 | 3.31 | 5.22 | 2.73 | 0.36 | 2.76 | 4.83 | 1.97 |
| Philosophy Theology | 0.97 | 2.09 | 3.32 | 1.48 | 0.53 | 3.11 | 1.87 | 1.98 | 0.71 | 2.64 | 2.22 | 1.64 |
| Other Humanities | 0.41 | 2.09 | 3.16 | 1.19 | 0.67 | 0.87 | 1.65 | 0.94 | 0.44 | 2.05 | 2.83 | 1.32 |
| Social Science | | | | | | | | | | | | |
| Economics | 0.03 | 1.34 | 1.34 | 0.34 | 0.57 | 3.86 | 3.94 | 1.95 | 0.17 | 3.24 | 2.22 | 1.14 |
| Geography | 0.04 | 1.14 | 0.75 | 0.39 | - | 0.69 | 0.81 | 0.32 | - | 0.95 | - | - |
| Political Science | - | 1.41 | 1.17 | 0.39 | - | 1.23 | 1.63 | 0.45 | - | 1.97 | 1.67 | 0.83 |
| Psychology | 0.44 | 5.97 | 6.50 | 2.07 | 0.19 | 2.82 | 3.36 | 1.39 | 0.40 | 6.14 | 4.25 | 2.44 |
| Sociology Criminology | 0.13 | 3.67 | 1.71 | 1.26 | 0.08 | 1.91 | 1.70 | 0.61 | 0.17 | 3.69 | 1.86 | 1.59 |
| Specialized Admin. | 2.42 | 2.42 | 3.94 | 5.09 | 2.01 | 1.02 | 1.53 | 1.81 | 2.32 | 1.57 | 2.64 | 2.20 |
| Commerce | 4.63 | 3.69 | 6.16 | 3.11 | 5.32 | 7.65 | 4.09 | 6.09 | 6.85 | 5.88 | 7.02 | 5.87 |
| Finance | 5.87 | 3.64 | 1.57 | 5.10 | 7.00 | 9.11 | 3.05 | 8.11 | 9.22 | 5.84 | 2.61 | 7.98 |
| Secretarial Studies | 23.97 | | | 1.91 | 20.86 | | | 3.73 | 19.89 | | | 1.82 |
| Marketing | 2.14 | 1.11 | 0.60 | 1.22 | 1.95 | 1.00 | - | 0.92 | 2.99 | 0.97 | - | 1.52 |
| Law | 0.21 | 2.57 | 1.91 | 1.76 | 0.13 | 1.30 | 1.72 | 1.54 | 0.30 | 2.11 | 1.64 | 1.59 |
| Other Social Science | 3.87 | 4.17 | 7.34 | 2.84 | 2.20 | 3.30 | 3.75 | 1.76 | 3.30 | 2.90 | 6.19 | 1.68 |
| Agricultural & BioScience | | | | | | | | | | | | |
| Agriculture | 1.04 | 0.63 | 0.45 | 0.38 | 0.95 | 0.91 | 1.08 | 0.61 | 0.80 | 0.51 | - | - |
| Biology | | 2.03 | 1.91 | 0.59 | | 1.95 | 2.76 | 0.92 | | 3.28 | 2.69 | 1.10 |
| Other Life Science | 0.14 | 2.09 | 1.35 | - | 0.14 | 2.63 | 2.17 | - | 0.20 | 2.00 | 1.28 | - |
| Household Science | 2.65 | | | 0.90 | 5.60 | | | 1.54 | 2.14 | | | 0.85 |
| Fish Wildlife Manage | 0.17 | | | - | 0.19 | | | - | 0.12 | | | - |
| Engineer&Applied Science | | | | | | | | | | | | |
| Architecture | | 0.34 | - | - | | 0.84 | 1.26 | 0.74 | | 0.48 | - | - |
| Other Engineering | - | 0.49 | 0.66 | 0.21 | - | 1.50 | 2.74 | 1.33 | | 0.78 | - | - |
| Chemical Engineering | | 0.19 | - | - | | 0.71 | 0.72 | 0.29 | | 0.30 | - | - |
| Civil Engineering | | 0.20 | - | - | | 0.88 | 1.40 | 0.61 | | 0.29 | - | - |
| Electrical Engineering | | 0.11 | - | - | | 0.90 | 1.56 | 0.70 | | 0.55 | - | - |
| Mechanical Engineer | | 0.15 | - | - | | 0.51 | 1.31 | 0.54 | | - | - | - |
| Forestry | 0.06 | 0.13 | - | - | - | - | - | - | - | - | - | - |
| Landscape Architect | 0.25 | | | - | 0.24 | | | - | 0.26 | | | - |
| Health Professions | | | | | | | | | | | | |
| Medicine | | 1.50 | 1.84 | 5.88 | | 2.56 | 3.43 | 10.78 | | 2.33 | 2.89 | 12.03 |
| Other Health | | | 7.16 | | | | 4.09 | | | | 5.11 | |
| Nursing | 10.84 | 6.24 | | 10.77 | 11.17 | 6.41 | | 11.07 | 8.88 | 5.17 | | 6.70 |
| Medical Assistant | 7.12 | | | | 7.14 | | | | 4.56 | | | |
| Public Health | 0.90 | 0.14 | | 1.32 | 0.86 | - | | 0.32 | 0.87 | - | | 0.79 |
| Rehab Medicine | 0.23 | 1.82 | | 1.14 | 0.47 | 1.16 | | 1.57 | 0.16 | 1.46 | | 1.28 |
| Medical Technician | 4.70 | 0.48 | | 1.52 | 3.10 | 1.46 | | 1.73 | 4.75 | 0.78 | | 1.26 |
| Math & Physical Sciences | | | | | | | | | | | | |
| Mathematics | | 1.10 | 0.50 | 0.30 | | 1.76 | 2.39 | 0.66 | | 2.16 | 1.11 | 0.78 |
| Computer Science | | 1.15 | - | 0.72 | | 2.41 | 2.71 | 1.47 | | 3.04 | 1.33 | 1.79 |
| Chemistry | 0.07 | 0.41 | - | - | 0.25 | 1.57 | 2.52 | 0.97 | 0.18 | 0.96 | 1.03 | - |
| Physics | - | - | - | - | - | 0.50 | 0.86 | 0.29 | - | - | - | - |
| Earth Science | 0.06 | 0.19 | 0.49 | - | - | 0.32 | 0.93 | - | - | 0.27 | - | - |
| Other Science | 0.54 | 0.89 | 0.46 | 0.45 | 0.68 | 1.59 | 0.84 | 0.80 | 0.73 | 1.61 | 0.89 | 0.96 |
| Other | | | | | | | | | | | | |
| Trades | 0.97 | - | | - | 1.62 | 0.17 | - | 0.29 | 1.11 | - | | - |
| Electronic Technology | 3.65 | | | | 4.29 | | | | 5.58 | | | |
| Environment Tech | 0.13 | | | | - | | | | - | | | |
| Mechanic | 0.52 | | | | 0.63 | | | | 0.39 | | | |
| Transport Technology | 0.50 | | | | 0.87 | | | | 0.45 | | | |
| Observations | 107,434 | 36,715 | 6,952 | 17,127 | 48,755 | 18,918 | 5,944 | 11,694 | 25,382 | 13,432 | 3,602 | 5,537 |

Source: 1996 Canadian Census. Dashes imply that the cell contents are suppressed for reasons of confidentiality.

TABLE 4

*EARNINGS*

1996 CANADIAN CENSUS - FEMALES

| Field | Canadian Born | | | | Foreign Educated Immigrants | | | | Canadian Educated Immigrants | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | College | Bachelor | Master's | Othr PS | College | Bachelor | Master's | Othr PS | College | Bachelor | Master's | Othr PS |
| Education | | | | | | | | | | | | |
| Education | 16,356 | 28,871 | 42,543 | 26,227 | 13,275 | 18,477 | 25,918 | 17,896 | 18,759 | 29,426 | 44,567 | 31,241 |
| Fine & AppliedArts | | | | | | | | | | | | |
| FineArt | 12,126 | 21,335 | 25,591 | 20,168 | 11,356 | 14,468 | 17,800 | 13,784 | 13,563 | 18,477 | 22,317 | 20,813 |
| Literature & Humanities | | | | | | | | | | | | |
| History | | 26,222 | 34,982 | 28,462 | | 16,272 | 15,764 | 13,997 | | 29,054 | 29,105 | 27,157 |
| Media | 21,410 | 28,916 | 35,430 | 28,472 | 15,616 | 16,847 | 28,859 | 15,030 | 20,640 | 27,197 | 36,410 | 23,478 |
| English | 17,212 | 27,133 | 30,230 | 30,885 | 12,991 | 18,335 | 26,804 | 16,496 | 20,020 | 27,514 | 33,039 | 31,373 |
| French | 18,418 | 28,369 | 31,528 | 27,932 | - | 17,283 | 36,027 | 13,603 | - | 31,164 | 31,139 | 30,839 |
| Other Literature | 19,153 | 27,475 | 31,339 | 22,438 | 15,971 | 13,593 | 21,654 | 14,243 | 18,828 | 27,361 | 35,452 | 27,764 |
| Philosophy Theology | 15,054 | 21,676 | 25,628 | 18,518 | 10,941 | 13,885 | 16,581 | 12,851 | 14,015 | 22,980 | 29,054 | 18,046 |
| Other Humanities | 16,912 | 24,944 | 35,302 | 23,580 | 13,432 | 20,119 | 22,631 | 19,277 | 18,162 | 25,837 | 28,039 | 26,182 |
| Social Science | | | | | | | | | | | | |
| Economics | 17,908 | 31,318 | 61,272 | 35,448 | 13,345 | 16,259 | 20,733 | 18,938 | 22,994 | 26,687 | 32,145 | 28,487 |
| Geography | 16,027 | 28,442 | 37,018 | 30,828 | - | 18,351 | 17,810 | 12,572 | - | 29,964 | - | - |
| Political Science | - | 28,602 | 40,077 | 27,186 | - | 17,051 | 18,155 | 15,182 | - | 26,949 | 30,440 | 29,718 |
| Psychology | 15,382 | 25,597 | 33,466 | 25,499 | 17,511 | 17,547 | 22,769 | 17,287 | 16,584 | 27,009 | 32,720 | 26,602 |
| Sociology Criminology | 20,208 | 27,023 | 37,826 | 26,554 | 15,014 | 19,802 | 26,201 | 17,930 | 23,056 | 26,042 | 32,822 | 26,696 |
| Specialized Admin. | 21,707 | 30,681 | 48,383 | 30,304 | 17,558 | 20,024 | 27,951 | 19,532 | 21,841 | 27,528 | 49,696 | 31,498 |
| Commerce | 20,213 | 34,158 | 55,186 | 30,638 | 17,057 | 17,671 | 30,677 | 17,756 | 22,526 | 29,279 | 50,428 | 27,930 |
| Finance | 20,596 | 37,174 | 46,350 | 32,662 | 17,626 | 19,078 | 27,938 | 18,455 | 22,608 | 32,197 | 46,563 | 31,905 |
| Secretarial Studies | 16,273 | | | 19,070 | 15,456 | | | 15,214 | 18,314 | | | 23,541 |
| Marketing | 22,964 | 34,394 | 51,175 | 30,266 | 15,759 | 18,040 | - | 17,053 | 23,820 | 29,050 | - | 29,307 |
| Law | 21,337 | 50,659 | 51,231 | 43,237 | 19,286 | 16,221 | 26,143 | 16,814 | 23,499 | 42,695 | 70,115 | 40,965 |
| Other Social Science | 18,034 | 26,837 | 37,333 | 22,142 | 13,832 | 19,341 | 31,096 | 17,687 | 19,543 | 28,151 | 41,317 | 25,878 |
| Agricultural & BioScience | | | | | | | | | | | | |
| Agriculture | 14,324 | 23,436 | 31,231 | 15,882 | 9,668 | 12,556 | 15,009 | 13,223 | 13,238 | 25,717 | - | - |
| Biology | | 25,298 | 32,544 | 26,293 | | 18,472 | 19,192 | 15,563 | | 25,560 | 32,983 | 29,581 |
| Other Life Science | 21,417 | 24,366 | 32,440 | - | 18,789 | 14,926 | 17,406 | - | 22,989 | 25,054 | 24,232 | - |
| Household Science | 11,932 | | | 24,455 | 10,825 | | | 15,132 | 15,069 | | | 27,977 |
| Fish Wildlife Manage | 13,562 | | | - | 10,486 | | | - | 16,535 | | | - |

| Field | Canadian Born | | | | Foreign Educated Immigrants | | | | Canadian Educated Immigrants | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | College | Bachelor | Master's | Othr PS | College | Bachelor | Master's | Othr PS | College | Bachelor | Master's | Othr PS |
| Engineer&Applied Science | | | | | | | | | | | | |
| Architecture | | 25,623 | - | - | | 14,108 | 20,368 | 14,440 | | 24,500 | - | - |
| Other Engineering | - | 35,606 | 43,404 | 25,197 | - | 18,087 | 25,808 | 17,079 | | 37,682 | - | - |
| Chemical Engineering | | 36,818 | - | - | | 17,582 | 23,222 | 19,574 | | 41,842 | - | - |
| Civil Engineering | | 34,949 | - | - | | 16,098 | 16,899 | 15,353 | | 31,635 | - | - |
| Electrical Engineering | | 46,977 | - | - | | 16,886 | 25,511 | 15,268 | | 40,288 | - | - |
| Mechanical Engineer | | 42,168 | - | - | | 15,919 | 23,893 | 14,248 | | - | - | - |
| Forestry | 17,769 | 29,583 | - | - | - | - | - | - | - | - | - | - |
| Landscape Architect | 18,689 | | | - | 14,396 | | | - | 21,087 | | | - |
| Health Professions | | | | | | | | | | | | |
| Medicine | | 39,605 | 57,384 | 69,849 | | 22,933 | 29,931 | 36,984 | | 39,039 | 64,274 | 70,055 |
| Other Health | | | 39,973 | | | | 29,787 | | | | 50,158 | |
| Nursing | 24,803 | 32,535 | | 25,889 | 20,950 | 27,571 | | 23,511 | 25,443 | 33,390 | | 28,558 |
| Medical Assistant | 16,401 | | | | 16,054 | | | | 17,017 | | | |
| Public Health | 24,386 | 34,913 | | 30,361 | 17,079 | - | | 27,738 | 26,851 | - | | 35,932 |
| Rehab Medicine | 18,115 | 32,940 | | 34,104 | 25,379 | 30,117 | | 29,045 | 17,377 | 34,539 | | 32,440 |
| Medical Technician | 21,672 | 27,536 | | 27,170 | 15,859 | 22,595 | | 18,354 | 22,129 | 28,400 | | 30,810 |
| Math & Physical Sciences | | | | | | | | | | | | |
| Mathematics | | 35,259 | 42,055 | 35,245 | | 20,423 | 28,391 | 13,957 | | 31,326 | 35,843 | 22,532 |
| Computer Science | | 41,954 | - | 31,357 | | 26,993 | 33,451 | 20,333 | | 38,776 | 40,096 | 33,361 |
| Chemistry | 27,695 | 30,272 | - | - | 14,399 | 18,538 | 26,156 | 18,496 | 23,920 | 29,157 | 40,621 | - |
| Physics | - | - | - | - | - | 16,833 | 29,499 | 12,609 | - | - | - | - |
| Earth Science | 19,748 | 30,714 | 44,996 | - | - | 20,021 | 20,596 | - | - | 30,161 | - | - |
| Other Science | 22,439 | 32,595 | 42,383 | 29,312 | 15,637 | 17,462 | 20,618 | 15,887 | 20,342 | 26,514 | 29,458 | 19,688 |
| Other | | | | | | | | | | | | |
| Trades | 18,069 | - | | - | 14,131 | 13,434 | - | 10,465 | 20,517 | - | | - |
| Electronic Technology | 20,575 | | | | 16,984 | | | | 22,679 | | | |
| Environment Tech | 16,222 | | | | - | | | | - | | | |
| Mechanic | 18,781 | | | | 16,534 | | | | 17,956 | | | |
| Transport Technology | 18,585 | | | | 14,163 | | | | 21,049 | | | |
| Average | 18,070 | 29,683 | 40,000 | 29,527 | 15,493 | 18,676 | 24,807 | 19,994 | 19,788 | 29,247 | 40,146 | 34,032 |

Source: 1996 Canadian Census. Dashes imply that the cell contents are suppressed for reasons of confidentiality.

Table 3 presents the frequency of observed fields for females by level of education for the Canadian-born, the foreign educated, and Canadian educated immigrants. An immediate difference is obvious on the first line; immigrants, regardless of where they are educated, are much less likely to have education degrees. A few other important differences are worth emphasizing. For example, immigrants are more likely to study non-English, and non-French, literature, more likely to study economics, commerce and finance, and less likely to study specialized administration. Immigrant women are also more likely to study engineering and to pursue medicine and science oriented fields such as mathematical science, and pure and applied sciences including computer science and chemistry. Some of these differences are quite large, for example, foreign educated immigrant females are about 85% more likely to have a bachelor's degree in medicine than are the Canadian-born.[6] Immigrants who obtain at least some of their education in Canada are just over 25% more likely to have a bachelor's in medicine. Immigrant and Canadian-born women have very different distributions of fields of study.

Men, in table 5, are seen to have a broadly similar pattern of differences in the distribution of fields of study, although there are also differences associated with gender. Men in each of the three groups are much less likely than women to study education or fine arts. Further, some of the differences observed between the Canadian-born and immigrants among females are not observable among males. In particular, immigrant males are no more likely, and perhaps slightly less likely, to pursue commerce and finance than the Canadian-born. Immigrant males are, however, less likely to pursue law. As is the case among women, immigrant men are much more likely to choose disciplines in the sciences and engineering than the Canadian born.

Earnings among females, in table 4, are seen to vary substantially across disciplines, with science and engineering graduates earning somewhat more than those with a social science and humanities background (of course, this is the combined result of the number of hours and weeks worked, and the hourly wage). There are, however, some notable exceptions. For example, among the Canadian-born with a Master's degree, those in economics had the highest earnings. More importantly, a pattern appears to exist such that immigrants educated in Canada have earnings comparable to the Canadian-born, while foreign educated immigrants have much lower earnings across most disciplines.

---

[6] Note that the census questions include a special category for those who are have a degree in "medicine, dentistry, veterinary medicine and optometry" and these are included in the bachelor's level unless the respondent indicates the presence of a master's degree. These categories are combined and labelled as medicine. This contrasts to tables 1 and 2, where they are isolated into the MD column.

TABLE 5

*COLUMN FREQUENCY %*

1996 CANADIAN CENSUS - MALES

| | Canadian Born | | | | Foreign Educated Immigrants | | | | Canadian Educated Immigrants | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Field | College | Bachelor | Master's | Othr PS | College | Bachelor | Master's | Othr PS | College | Bachelor | Master's | Othr PS |
| Education | | | | | | | | | | | | |
| Education | 1.57 | 13.93 | 19.03 | 16.47 | 1.52 | 4.80 | 7.57 | 5.99 | 1.39 | 7.26 | 12.98 | 10.07 |
| Fine & AppliedArts | | | | | | | | | | | | |
| FineArt | 3.96 | 1.95 | 1.62 | 1.80 | 5.90 | 1.94 | 1.95 | 2.26 | 5.94 | 2.14 | 1.63 | 1.97 |
| Literature & Humanities | | | | | | | | | | | | |
| History | | 2.87 | 2.09 | 1.40 | | 1.48 | 1.63 | 0.85 | | 2.28 | 2.41 | 1.13 |
| Media | 0.92 | 1.65 | 1.80 | 1.42 | 0.36 | 0.99 | 1.18 | 1.20 | 0.84 | 1.36 | 1.55 | 1.16 |
| English | 0.05 | 1.76 | 1.58 | 0.87 | 0.13 | 1.61 | 1.23 | 0.73 | - | 1.94 | 1.68 | 0.70 |
| French | - | - | - | - | - | - | - | - | - | - | - | - |
| Other Literature | 0.07 | 0.50 | 0.66 | 0.54 | 0.13 | 1.04 | 1.31 | 0.98 | - | 0.73 | 1.67 | 0.65 |
| Philosophy Theology | 0.82 | 2.87 | 6.53 | 2.30 | 0.50 | 2.62 | 4.31 | 1.87 | 0.54 | 2.37 | 4.59 | 1.57 |
| Other Humanities | 0.49 | 1.28 | 2.77 | 0.85 | 0.48 | 0.54 | 1.21 | 0.40 | 0.45 | 1.12 | 2.07 | 0.78 |
| Social Science | | | | | | | | | | | | |
| Economics | 0.07 | 4.31 | 3.55 | 1.48 | 0.21 | 4.96 | 4.39 | 2.53 | 0.12 | 5.10 | 3.33 | 2.08 |
| Geography | 0.10 | 2.33 | 1.10 | 0.96 | 0.07 | 0.65 | 0.60 | 0.48 | - | 1.72 | 0.81 | 0.82 |
| Political Science | 0.04 | 2.51 | 1.70 | 0.96 | - | 1.51 | 1.29 | 0.69 | - | 2.51 | 1.87 | 0.92 |
| Psychology | 0.11 | 2.56 | 2.70 | 1.19 | - | 0.84 | 0.99 | 0.39 | 0.10 | 2.55 | 2.04 | 0.98 |
| Sociology Criminology | 0.13 | 1.78 | 1.27 | 1.29 | 0.06 | 0.89 | 0.65 | 0.67 | 0.20 | 1.72 | 1.04 | 0.96 |
| Specialized Admin. | 2.04 | 3.55 | 5.19 | 6.00 | 1.84 | 1.10 | 1.55 | 2.06 | 1.98 | 1.20 | 2.04 | 2.53 |
| Commerce | 3.46 | 8.26 | 14.21 | 7.38 | 2.76 | 8.50 | 8.69 | 6.65 | 4.59 | 7.64 | 13.18 | 7.60 |
| Finance | 3.41 | 7.11 | 3.85 | 12.13 | 4.20 | 8.90 | 4.54 | 9.25 | 4.79 | 7.19 | 3.67 | 11.43 |
| Secretarial Studies | 1.27 | | | - | 1.60 | | | - | 0.86 | | | - |
| Marketing | 2.01 | 1.58 | 0.89 | 2.18 | 1.44 | 1.04 | 0.69 | 1.35 | 2.20 | 1.04 | 0.80 | 1.74 |
| Law | 0.14 | 4.76 | 3.14 | 4.65 | 0.11 | 2.24 | 1.77 | 2.17 | 0.13 | 3.20 | 2.57 | 2.67 |
| Other Social Science | 3.62 | 1.22 | 2.41 | 1.09 | 1.13 | 0.90 | 1.33 | 0.60 | 2.36 | 0.72 | 1.87 | 0.70 |
| Agricultural & BioScience | | | | | | | | | | | | |
| Agriculture | 1.61 | 1.53 | 0.89 | 3.50 | 2.20 | 1.64 | 1.44 | 1.61 | 1.43 | 0.73 | 0.61 | 1.38 |
| Biology | | 2.13 | 1.91 | 0.91 | | 1.34 | 1.03 | 0.60 | | 2.58 | 1.55 | 0.99 |
| Other Life Science | 0.11 | 0.49 | 0.61 | - | 0.10 | 0.57 | 0.83 | - | 0.11 | 0.58 | 0.63 | - |
| Household Science | 2.03 | | | - | 3.66 | | | 0.43 | 2.28 | | | - |
| Fish Wildlife Manage | 1.04 | | | - | 0.92 | | | - | 0.56 | | | |
| | Canadian Born | | | | Foreign Educated Immigrants | | | | Canadian Educated Immigrants | | | |
| Field | College | Bachelor | Master's | Othr PS | College | Bachelor | Master's | Othr PS | College | Bachelor | Master's | Othr PS |
| Engineer&Applied Science | | | | | | | | | | | | |
| Architecture | | 1.10 | 0.87 | 0.68 | | 2.25 | 2.25 | 2.47 | | 1.53 | 1.20 | 1.55 |
| Other Engineering | 0.05 | 5.05 | 3.87 | 2.51 | - | 8.95 | 9.30 | 8.45 | - | 7.44 | 8.07 | 5.24 |
| Chemical Engineering | | 1.05 | 0.64 | 0.25 | | 1.50 | 1.87 | 0.67 | | 1.37 | 1.35 | 0.48 |
| Civil Engineering | | 2.67 | 1.76 | 1.15 | | 5.49 | 5.77 | 4.22 | | 2.93 | 2.70 | 1.94 |
| Electrical Engineering | | 2.84 | 1.61 | 1.47 | | 7.60 | 6.83 | 5.43 | | 5.71 | 4.11 | 3.09 |
| Mechanical Engineer | | 3.02 | 1.22 | 0.85 | | 6.31 | 5.82 | 5.42 | | 3.83 | 2.59 | 2.45 |
| Forestry | 0.52 | 0.96 | 0.41 | 0.67 | 0.11 | 0.37 | 0.43 | 0.30 | 0.32 | 0.53 | - | - |
| Landscape Architect | 0.91 | | | - | 0.63 | | | - | 1.55 | | | - |
| Health Professions | | | | | | | | | | | | |
| Medicine | | 1.18 | 2.44 | 14.99 | | 1.79 | 2.99 | 17.92 | | 1.76 | 3.44 | 20.55 |
| Other Health | | | 0.68 | | | | 0.87 | | | | 0.67 | |
| Nursing | 0.44 | 0.34 | | 0.46 | 0.46 | 0.42 | | 0.71 | 0.42 | 0.30 | | - |
| Medical Assistant | 0.56 | | | 0.00 | 0.51 | | | | 0.46 | | | |
| Public Health | 3.47 | - | | 0.36 | 3.50 | - | | - | 3.30 | - | | - |
| Rehab Medicine | 0.03 | 0.26 | | - | 0.06 | 0.23 | | 0.42 | - | - | | - |
| Medical Technician | 1.50 | 0.20 | | 1.31 | 1.26 | 0.64 | | 1.30 | 1.52 | 0.33 | | 1.21 |
| Math & Physical Sciences | | | | | | | | | | | | |
| Mathematics | | 2.02 | 1.30 | 0.76 | | 2.20 | 2.05 | 0.92 | | 2.74 | 2.13 | 1.57 |
| Computer Science | | 3.23 | 1.58 | 1.95 | | 4.68 | 4.83 | 2.91 | | 6.55 | 3.11 | 3.46 |
| Chemistry | 0.17 | 1.12 | 0.80 | 0.52 | 0.26 | 2.15 | 1.87 | 1.17 | 0.26 | 1.87 | 1.22 | 0.99 |
| Physics | - | 0.80 | 0.92 | 0.23 | 0.07 | 1.46 | 1.71 | 0.64 | - | 1.30 | 1.46 | - |
| Earth Science | 0.22 | 1.25 | 1.62 | 0.48 | 0.18 | 1.02 | 1.86 | 0.50 | 0.17 | 1.20 | 1.76 | - |
| Other Science | 0.40 | 1.51 | 0.54 | 0.76 | 0.41 | 1.93 | 0.71 | 0.85 | 0.54 | 2.33 | 0.78 | 1.43 |
| Other | | | | | | | | | | | | |
| Trades | 26.22 | 0.12 | - | 0.49 | 27.37 | 0.55 | - | 1.25 | 23.50 | - | - | 0.73 |
| Electronic Technology | 13.05 | | | | 12.54 | | | | 16.85 | | | |
| Environment Tech | 0.81 | | | | 0.38 | | | | 0.45 | | | |
| Mechanic | 18.28 | | | | 16.95 | | | | 14.59 | | | |
| Transport Technology | 4.25 | | | | 5.91 | | | | 4.75 | | | |
| Observations | 116,472 | 37,163 | 10,200 | 14,543 | 57,358 | 20,429 | 9,313 | 12,591 | 29,933 | 14,795 | 5,402 | 6,448 |

Source: 1996 Canadian Census. Dashes imply that the cell contents are suppressed for reasons of confidentiality.

TABLE 6
*EARNINGS*

1996 CANADIAN CENSUS - MALES

| | Canadian Born | | | | Foreign Educated Immigrants | | | | Canadian Educated Immigrants | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Field | College | Bachelor | Master's | Othr PS | College | Bachelor | Master's | Othr PS | College | Bachelor | Master's | Othr PS |
| Education | | | | | | | | | | | | |
| Education | 26,235 | 38,373 | 50,960 | 41,436 | 20,407 | 30,401 | 35,294 | 25,707 | 26,868 | 41,750 | 54,758 | 41,817 |
| Fine & AppliedArts | | | | | | | | | | | | |
| FineArt | 25,767 | 27,839 | 43,646 | 28,870 | 22,971 | 22,708 | 28,649 | 23,133 | 27,528 | 28,957 | 33,128 | 32,145 |
| Literature & Humanities | | | | | | | | | | | | |
| History | | 41,448 | 54,125 | 39,981 | | 28,406 | 34,667 | 18,675 | | 37,667 | 47,840 | 45,004 |
| Media | 30,751 | 36,319 | 40,180 | 34,072 | 26,775 | 23,200 | 35,517 | 20,996 | 32,586 | 38,512 | 41,752 | 36,130 |
| English | 23,642 | 35,389 | 46,184 | 40,445 | 25,019 | 30,046 | 34,751 | 23,705 | - | 35,103 | 38,381 | 37,621 |
| French | - | - | - | - | - | - | - | - | - | - | - | - |
| Other Literature | 26,013 | 36,372 | 36,463 | 31,870 | 23,892 | 18,331 | 30,291 | 23,215 | - | 38,485 | 43,821 | 31,800 |
| Philosophy Theology | 26,649 | 32,051 | 34,158 | 28,013 | 21,869 | 26,845 | 30,028 | 25,126 | 27,073 | 34,629 | 33,031 | 34,758 |
| Other Humanities | 26,573 | 39,441 | 46,273 | 31,534 | 20,020 | 30,532 | 35,199 | 27,239 | 29,882 | 35,192 | 49,788 | 32,648 |
| Social Science | | | | | | | | | | | | |
| Economics | 31,093 | 52,009 | 63,522 | 50,758 | 28,042 | 35,146 | 35,435 | 26,229 | 53,351 | 43,765 | 62,587 | 46,934 |
| Geography | 34,383 | 40,282 | 47,888 | 39,565 | 27,162 | 30,137 | 36,554 | 26,072 | - | 43,701 | 45,874 | 36,217 |
| Political Science | 34,785 | 42,815 | 50,503 | 43,556 | - | 27,883 | 33,121 | 24,563 | - | 41,239 | 42,188 | 32,108 |
| Psychology | 26,078 | 40,775 | 45,613 | 35,769 | - | 30,203 | 46,671 | 27,378 | 38,457 | 40,124 | 46,477 | 41,663 |
| Sociology Criminology | 37,945 | 40,231 | 45,496 | 40,613 | 20,154 | 27,494 | 27,965 | 20,884 | 34,664 | 34,454 | 42,031 | 37,582 |
| Specialized Admin. | 32,939 | 47,294 | 65,215 | 44,287 | 26,365 | 30,025 | 34,755 | 29,011 | 32,703 | 41,028 | 62,590 | 42,462 |
| Commerce | 38,558 | 57,232 | 91,664 | 52,823 | 30,622 | 29,472 | 51,760 | 27,887 | 36,980 | 48,259 | 76,390 | 47,247 |
| Finance | 39,480 | 58,630 | 73,415 | 57,700 | 31,082 | 34,676 | 45,524 | 38,166 | 40,630 | 54,054 | 68,206 | 53,392 |
| Secretarial Studies | 27,131 | | | - | 22,473 | | | - | 33,753 | | | - |
| Marketing | 39,105 | 47,833 | 64,502 | 44,786 | 31,957 | 28,097 | 47,661 | 38,730 | 40,967 | 46,217 | 53,803 | 41,911 |
| Law | 37,749 | 79,892 | 97,403 | 76,977 | 33,121 | 34,961 | 36,910 | 32,770 | 34,931 | 69,433 | 79,791 | 71,710 |
| Other Social Science | 34,801 | 38,463 | 51,991 | 31,908 | 25,266 | 23,908 | 35,565 | 25,081 | 35,867 | 36,761 | 48,817 | 27,466 |
| Agricultural & BioScience | | | | | | | | | | | | |
| Agriculture | 23,480 | 38,869 | 50,637 | 26,675 | 19,729 | 23,349 | 29,530 | 24,042 | 24,990 | 36,165 | 44,948 | 27,386 |
| Biology | | 40,419 | 46,096 | 42,972 | | 28,847 | 39,876 | 28,878 | | 39,092 | 47,045 | 42,539 |
| Other Life Science | 32,625 | 38,249 | 47,300 | - | 23,400 | 28,160 | 30,291 | - | 31,403 | 35,183 | 54,007 | - |
| Household Science | 22,976 | | | - | 22,916 | | | 22,674 | 26,866 | | | - |
| Fish Wildlife Manage | 25,508 | | | - | 25,706 | | | - | - | | | |
| Engineer&Applied Science | | | | | | | | | | | | |
| Architecture | | 41,290 | 39,043 | 36,943 | | 27,044 | 35,329 | 27,348 | | 39,333 | 41,650 | 39,177 |
| Other Engineering | 21,048 | 57,959 | 68,002 | 46,365 | - | 39,556 | 48,383 | 32,854 | - | 52,752 | 58,105 | 50,273 |
| Chemical Engineering | | 64,871 | 70,182 | 47,505 | | 41,863 | 49,932 | 45,736 | | 58,980 | 63,266 | 40,689 |
| Civil Engineering | | 54,159 | 62,832 | 42,886 | | 31,868 | 38,658 | 28,501 | | 51,980 | 58,494 | 37,150 |
| Electrical Engineering | | 58,445 | 67,963 | 46,603 | | 36,298 | 45,087 | 32,174 | | 48,649 | 59,856 | 43,014 |
| Mechanical Engineer | | 55,987 | 65,977 | 61,773 | | 34,726 | 43,951 | 34,694 | | 56,115 | 63,404 | 41,112 |
| Forestry | 31,727 | 52,581 | 68,890 | 41,235 | 25,496 | 34,586 | 23,908 | 24,855 | 39,294 | 42,206 | - | - |
| Landscape Architect | 31,683 | | | - | 27,239 | | | - | 32,300 | | | - |
| Health Professions | | | | | | | | | | | | |
| Medicine | | 54,367 | 106,756 | 111,348 | | 36,058 | 70,036 | 84,065 | | 50,249 | 104,611 | 110,982 |
| Other Health | | | 57,263 | | | | 56,105 | | | | 57,183 | |
| Nursing | 33,199 | 35,937 | | 33,978 | 30,047 | 29,809 | | 28,862 | 29,284 | 33,011 | | - |
| Medical Assistant | 23,548 | | | | 23,246 | | | | 25,870 | | | |
| Public Health | 33,188 | - | | 39,434 | 27,208 | - | | - | 38,373 | - | | - |
| Rehab Medicine | 28,244 | 44,718 | | - | 31,471 | 48,833 | | 53,407 | - | - | | - |
| Medical Technician | 32,859 | 59,824 | | 60,595 | 27,474 | 27,788 | | 33,995 | 36,429 | 35,004 | | 64,395 |
| Math & Physical Sciences | | | | | | | | | | | | |
| Mathematics | | 56,053 | 62,013 | 49,527 | | 35,283 | 43,519 | 26,960 | | 50,313 | 53,186 | 53,085 |
| Computer Science | | 51,866 | 59,237 | 43,220 | | 36,079 | 40,206 | 30,133 | | 44,512 | 58,040 | 36,144 |
| Chemistry | 39,952 | 51,405 | 50,429 | 47,643 | 29,793 | 36,269 | 35,662 | 31,398 | 42,325 | 50,617 | 50,358 | 45,481 |
| Physics | - | 46,831 | 55,204 | 36,379 | 29,839 | 34,497 | 40,819 | 28,133 | - | 45,810 | 53,343 | - |
| Earth Science | 37,815 | 50,517 | 54,768 | 49,407 | 33,769 | 39,672 | 39,179 | 30,747 | 42,265 | 49,317 | 54,350 | - |
| Other Science | 34,806 | 50,153 | 50,564 | 45,704 | 27,339 | 29,252 | 39,141 | 26,951 | 33,472 | 43,421 | 50,521 | 43,315 |
| Other | | | | | | | | | | | | |
| Trades | 31,025 | 45,303 | - | 33,791 | 29,128 | 28,006 | - | 28,841 | 35,650 | - | - | 44,575 |
| Electronic Technology | 36,259 | | | | 29,812 | | | | 36,344 | | | |
| Environment Tech | 33,838 | | | | 31,452 | | | | 34,671 | | | |
| Mechanic | 31,689 | | | | 29,378 | | | | 34,812 | | | |
| Transport Technology | 34,042 | | | | 32,180 | | | | 38,921 | | | |
| Average | 32,262 | 48,864 | 61,553 | 55,967 | 28,205 | 32,716 | 41,479 | 39,930 | 35,066 | 46,155 | 58,275 | 58,292 |

Source: 1996 Canadian Census. Dashes imply that the cell contents are suppressed for reasons of confidentiality.

Turning to male earnings in table 6, education, fine arts, humanities and agricultural and biological sciences are seen, in general, to have lower annual earnings for all three population subgroups. Social sciences are extremely diverse, while engineering, health, and math and physical sciences tend to be somewhat more uniformly higher. Once again, foreign educated immigrants earn less than the other two, which are broadly similar though the estimates do vary. Some fields, such as law, seem to have a particularly large difference depending upon where the education was obtained. Immigrants educated in law outside of Canada receive massively less, for example about $35,000 less per year at the bachelor's level, than those educated in Canada.

## *IV. Regression Analysis of Earnings by Field of Study*

The descriptive statistics in tables 3 through 6 do not control for issues of relevance to the labour market such as differences in age, or place of residence, which clearly affect earnings and differ substantially across the subpopulations of interest. Further, many questions of interest focus on those who participate in the workforce. Therefore, in accord with the previous literature, this section focuses on those with positive earnings and weeks of work. If the distribution of field of study is changed by policy, then, in terms of earnings, this is the relevant group to study (though the proportion of each group that works may also be an issue). These regressions control for observable characteristics to get a better picture of field of study effects for similar individuals. The dependent variable is the natural logarithm of annual earnings. In addition to the independent variables observed in the tables, these regressions also contain 9 province of residence indicators (that is, variables where each equals one if the case is true, and zero otherwise; sometimes they are called dummy variables), 23 Census Metropolitan Area indicators, along with 3 census area indicators for British Columbia, Ontario, and Québec that capture a set of smaller urban centres (i.e., each is set to one if the person lives in a small urban centre) and a quartic (fourth order polynomial) in age. Note that the regressions do not control for occupation. This is appropriate in this context since occupation is endogenous. By omitting occupation, these regressions provide a better measure of a "pure" field of study effect. This also allows the value that follows from some fields having graduates that are more flexible than others and being able to be employed across a variety of occupations to be observed. Baker and Benjamin (1994) omit occupation for a similar reason, though they are not looking at field of study.

Tables 7 through 10 each contain selected results from two distinct regressions, one for each sex. Each regression includes the Canadian born, and the two immigrant groups, thus allowing comparisons. Separate regressions are run for each of: Bachelor's degree (tables 7 and 8), College certificate or diploma (table 9), and Master's degree (table 10). The tables are formatted to make the output as parsimonious as possible given the need to display results for a large number of fields of study. Tables 7 and 8 display two distinct parts of the same two regressions: table 7 presents selected background coefficients, and table 8 shows those for field of study. For the regressions in tables 9 and 10 the background coefficients are suppressed since they have a similar pattern to those in table 7 and they are not the focus of this study. Each regression has the following format:

$$\begin{aligned} \ln(earnings) &= b_0 + b_{FI} FI + b_{CI} CI + b_{CB} X + b_{FI} FI * X + b_{CI} CI * X + \\ &f_{CB} Field + f_{FI} FI * Field + f_{CI} CI * Field + \varepsilon \end{aligned} \qquad (1)$$

where the *b*'s and *f*'s are coefficients to be estimated, *FI* and *CI* are indicator (zero or one) variables indicating whether the observation is a foreign educated, or Canadian educated, immigrant. The vector *X* contains the background (non-field of study) variables including: age, place of residence, visible minority, age at immigration and language. Some of these background variables, the set of arrival cohort, age at immigration, and source region indicators, are unique to immigrants, in which case they are set to zero for the Canadian-born. This setup implies that, for each variable that is common to the three groups, both sets of immigrant coefficients estimate differences from the "base case" Canadian-born one. However, those coefficients, such as age at immigration, that are unique to immigrants, do not have an interpretation that involves deviations. Note that, similarly to the other variables that are in common, the immigrant *Field* coefficients are also defined as deviations, or differences, from the Canadian-born average. The total effect for immigrants is the sum of the two coefficients.[7]

### *IV.1 Bachelor's Degree Holders*

The first two regressions compare each immigrant group (Canadian and foreign educated) to the Canadian-born, where all those included in the regressions have exactly a bachelor's degree. Table 7 presents the interesting background variables' coefficients. Regression results for females are on the left, and those for males are on the right. Only the Canadian educated immigrant females' indicator variable is statistically significantly different from the overall regression intercept (which is effectively the intercept for the Canadian-born), as seen in the first row. Note that this indicator variable reflects the (ln)earnings for the combination of the omitted groups: that is, those who are not visible minorities, speak English, arrived between 1961 and 1965 at age 16 to 20, from the region of origin that includes the United States, the United Kingdom, Australia, New Zealand and other English speaking countries, and the like. This suggests that controlling for the observables in the regression, the male and foreign educated immigrant's earnings are comparable. Of course, controlling for other factors is not innocuous, as will be seen in the predictions in tables 11 and 12. Strikingly, the visible minority indicator is effectively zero for the Canadian-born females, but large, statistically significant and negative for the Canadian-born males. Neither Canadian educated immigrant visible minority coefficient differs from that for the Canadian-born. However, both foreign educated visible minority coefficients are negative and statistically significant. Like the visible minority indicators, the language variables appear to differ across the sexes. Relative to those who speak only English, the omitted group, Canadian-born females who speak French have a premium, whereas the equivalent males have a deficit. Further, immigrant males have an even larger deficit, while there is no additional gain (or loss) for the females. Females also have a premium for being bilingual, while males who are bilingual do not have earnings that differ, on average, from those who speak only English. Most strikingly, males who speak neither language appear to have no earnings penalty, whereas the foreign educated females have a large one. Of course, as seen in the descriptive statistics, there are very few observations in this group, for example, Canadian-born workers with bachelor's degrees who speak neither official language.

---

[7] We explored a variety of related specifications, for example, forcing the Canadian-born and each immigrant group to have common field of study coefficients, or suppressing the field of study coefficients altogether, but there were no important changes from the current findings that resulted. In particular, the age at immigration, cohort and source country coefficients were relatively stable.

TABLE 7 - 1996 BACHELORS: EARNINGS

| | Females | | | Males | | |
|---|---|---|---|---|---|---|
| Variables | Cdn Born | Foreign Educ | Cdn Educ | Cdn Born | Foreign Educ | Cdn Educ |
| Immigrant/Intercept | 9.783*** | -0.039 | -0.112** | 9.814*** | 0.077 | 0.007 |
| | [0.017] | [0.153] | [0.046] | [0.016] | [0.173] | [0.042] |
| Vismin | 0.007 | -0.083* | -0.021 | -0.152*** | -0.119*** | 0.043 |
| | [0.022] | [0.047] | [0.043] | [0.019] | [0.035] | [0.036] |
| Language Knowledge | | | | | | |
| French | 0.045*** | -0.014 | 0.082 | -0.063*** | -0.151** | -0.195* |
| | [0.015] | [0.069] | [0.092] | [0.015] | [0.082] | [0.101] |
| Bilingual | 0.061*** | 0.097*** | 0.010 | 0.004 | 0.021 | -0.004 |
| | [0.009] | [0.028] | [0.023] | [0.008] | [0.022] | [0.019] |
| Neither | 0.313 | -0.594** | -0.737 | -0.282 | 0.060 | 0.010 |
| | [0.277] | [0.299] | [0.555] | [0.380] | [0.387] | [0.572] |
| Arrival Cohort | | | | | | |
| i9195 | | -0.606*** | -0.399*** | | -0.610*** | -0.138* |
| | | [0.063] | [0.080] | | [0.050] | [0.080] |
| i8690 | | -0.242*** | -0.220*** | | -0.293*** | -0.192*** |
| | | [0.064] | [0.055] | | [0.050] | [0.048] |
| i8185 | | -0.160** | -0.135*** | | -0.195*** | -0.046 |
| | | [0.065] | [0.048] | | [0.051] | [0.041] |
| i7680 | | -0.082 | -0.039 | | -0.086* | -0.028 |
| | | [0.064] | [0.042] | | [0.051] | [0.035] |
| i7175 | | -0.053 | 0.003 | | -0.113** | -0.061** |
| | | [0.063] | [0.038] | | [0.050] | [0.031] |
| i6670 | | 0.038 | 0.023 | | -0.069 | -0.010 |
| | | [0.065] | [0.037] | | [0.051] | [0.030] |
| i5660 | | 0.100 | -0.014 | | -0.144* | -0.001 |
| | | [0.120] | [0.044] | | [0.087] | [0.033] |
| i2555 | | -0.038 | 0.062 | | -0.559*** | -0.001 |
| | | [0.274] | [0.043] | | [0.192] | [0.032] |
| Age-at-Immigration | | | | | | |
| ia05 | | - | 0.047 | | - | 0.067*** |
| | | - | [0.031] | | - | [0.025] |
| ia610 | | - | 0.035 | | - | 0.069*** |
| | | - | [0.031] | | - | [0.025] |
| ia1115 | | - | 0.034 | | - | 0.040 |
| | | - | [0.031] | | - | [0.025] |
| ia2125 | | -0.129 | -0.044 | | 0.275* | -0.052** |
| | | [0.140] | [0.031] | | [0.165] | [0.026] |
| ia2630 | | -0.176 | -0.137 | | 0.213 | -0.136 |
| | | [0.140] | [0.148] | | [0.165] | [0.101] |
| ia3135 | | -0.278** | - | | 0.141 | - |
| | | [0.140] | - | | [0.165] | - |
| ia3640 | | -0.368*** | - | | 0.081 | - |
| | | [0.142] | - | | [0.165] | - |
| ia4145 | | -0.435*** | - | | -0.037 | - |
| | | [0.144] | - | | [0.166] | - |
| ia4650 | | -0.537*** | - | | -0.010 | - |
| | | [0.152] | - | | [0.169] | - |
| ia5165 | | -0.461*** | - | | -0.037 | - |
| | | [0.167] | - | | [0.172] | - |
| Region of Origin | | | | | | |
| Western Europe | | -0.009 | 0.013 | | -0.187*** | -0.056** |
| | | [0.051] | [0.033] | | [0.042] | [0.025] |
| Southern Europe | | -0.104 | 0.087** | | -0.409*** | -0.055* |
| | | [0.099] | [0.039] | | [0.068] | [0.028] |
| Other Europe | | -0.188*** | -0.049 | | -0.479*** | -0.076** |
| | | [0.039] | [0.041] | | [0.030] | [0.032] |
| India & Pakistan | | -0.242*** | -0.173*** | | -0.297*** | -0.106** |
| | | [0.051] | [0.050] | | [0.038] | [0.043] |
| China | | 0.066 | 0.080* | | -0.202*** | -0.095** |
| | | [0.051] | [0.047] | | [0.038] | [0.039] |
| Japan & Korea | | -0.158** | -0.160** | | -0.207*** | -0.205*** |
| | | [0.066] | [0.080] | | [0.049] | [0.071] |
| South East Asia | | 0.014 | 0.006 | | -0.311*** | -0.094** |
| | | [0.048] | [0.049] | | [0.038] | [0.043] |
| Africa | | -0.025 | 0.014 | | -0.251*** | -0.013 |
| | | [0.050] | [0.046] | | [0.036] | [0.037] |
| Mexico & S. America | | -0.031 | -0.011 | | -0.214*** | -0.107*** |
| | | [0.052] | [0.043] | | [0.039] | [0.037] |
| Other | | -0.163*** | -0.138** | | -0.419*** | -0.142*** |
| | | [0.054] | [0.060] | | [0.038] | [0.045] |
| Field of Study Controls | | | | | | |
| Fields | | | Yes | | | Yes |
| Fields*Immig | | | Yes | | | Yes |
| Observations | | | 120672 | | | 132974 |
| R-squared | | | 0.099 | | | 0.167 |

Source: 1996 Canadian Census

Notes: Heteroskedastic consistent standard errors in brackets. Significance Level: * 10%; ** 5%; *** 1%. Also included in the regression are 9 province of residence indicators, 23 census metropolitan area indicators, 3 census area indicators for BC, ON, and PQ, and a fourth order polynomial in age.

The arrival cohort coefficients have a similar pattern to that seen in previous work starting with Chiswick's (1978) seminal article. That is, the more recent entry cohorts have lower earnings. Of course, this is a mixture of time in the country and any changes in cohort composition, or labour market opportunities, that may have occurred.[8] Interestingly, the profile is steeper for the foreign educated, suggesting that Canadian education may alleviate some of the cohort effects. Since the omitted group is those who immigrated between 1961 and 1965, there is evidence that males who immigrated prior to that (and remain in the labour market in 1996) have poorer outcomes. Age at immigration has a profile such that those who immigrate at a young age have better labour market outcomes. Note that the omitted category for both immigrant groups is those who arrive between the ages of 16 and 20. Region of origin is also correlated with earnings. The omitted category are those who immigrate from the industrialized, English speaking countries: the UK, US, Australia, New Zealand and related. Females are for the most part much less affected by region of origin; in contrast, it has an important impact on males. For both sexes though, the coefficients are much smaller for those educated in Canada.

Some results from regressions that are not presented are quite interesting. Consider the same control variables presented in table 7. Across the various immigrant groups, there appears to be no appreciable correlation between field of study and these variables that is also correlated with earnings. That is, when the set of field indicator variables is removed, there is no substantial change in any of the other coefficients presented other than immigrant status. This lack of a correlation is remarkable. Further, when field of study is removed completely from the regression there is neither an increase, nor a decline, across arrival cohort coefficients as a result. If the immigrant admission system were increasingly selecting individuals because of their having valuable (or less valuable) fields of study, then these coefficients would be altered when the field of study variables are added to the regression. But this does not occur. Rather, field of study appears to be completely neutral in relation to arrival cohort effects. It is also neutral with respect to age at immigration. Further, and perhaps most surprisingly, it is not correlated with region of origin.

Turning to the field of study coefficients in table 8, however, it is clear that while field may not be correlated with the other regressors, it clearly captures an important source of earnings variation across individuals. The first column for each sex contains the coefficients for the Canadian-born, and the subsequent two columns' coefficients are deviations from that Canadian-born coefficient for each immigrant group. Thus, on average, immigrants in a particular field of study obtain earnings commensurate with the coefficient for the Canadian-born, plus the relevant for their difference from the Canadian-born. Note that a degree from an education faculty is the omitted field of study, so it shifts the immigrant indicator variable. That indicator, and the overall intercept, are presented in the first row of the table; this row replicates a row in table 7. The coefficients suggest a strong pattern of earnings differences across fields of study, with those in fine and applied arts, humanities, the traditional social sciences (except economics), and agriculture and biological sciences earning less than those with education degrees.[9] In contrast, those with administration, business and law degrees earn more, on average, as do those with engineering and applied science, health science and natural science degrees.

---

[8] Since this is cross-sectional data, the arrival cohort, and age at immigration, coefficients measure a changes in the unobserved characteristics and differing labour market environments that affect the earnings of immigrants inasmuch as they are correlated with earnings as well as economic integration effects or those related to age at immigration itself. Also, these have the interpretation of differences from what would be expected for a Canadian-born person of the same age. For a discussion of the identification issues see Schaafsma and Sweetman (2001). See also Borjas (1985, 1995), Baker and Benjamin (1994), and Bloom, Grenier and Gunderson (1995).

[9] The term "traditional social sciences" is used to refer to those disciplines usually in social science faculties in universities, for example, economics, geography, political science and the like. This contrasts with the broader

---

census definition, which includes professional fields within business, law and administration. We observe that the findings for these two sets of fields are quite different.

TABLE 8 - 1996 BACHELORS' EARNINGS

| | Female | | | Male | | |
|---|---|---|---|---|---|---|
| Variable | Cdn Born | Foreign Educ | Cdn Educ | Cdn Born | Foreign Educ | Cdn Educ |
| Immigrant/Intercept | 9.783*** | -0.039 | -0.112** | 9.814*** | 0.077 | 0.007 |
| | [0.017] | [0.153] | [0.046] | [0.016] | [0.173] | [0.042] |
| Fine & Applied Arts | | | | | | |
| Fine Arts | -0.480*** | 0.251*** | 0.017 | -0.515*** | 0.141** | 0.004 |
| | [0.018] | [0.051] | [0.055] | [0.021] | [0.061] | [0.061] |
| Lit. & Humanities | | | | | | |
| History | -0.162*** | 0.084 | 0.123* | -0.139*** | -0.039 | -0.048 |
| | [0.024] | [0.066] | [0.071] | [0.017] | [0.066] | [0.059] |
| Media Studies | -0.088*** | 0.099 | -0.015 | -0.205*** | -0.004 | 0.024 |
| | [0.023] | [0.071] | [0.075] | [0.022] | [0.079] | [0.073] |
| English | -0.201*** | 0.211*** | 0.018 | -0.246*** | 0.036 | -0.128** |
| | [0.017] | [0.054] | [0.049] | [0.021] | [0.063] | [0.063] |
| French | -0.104*** | -0.043 | 0.175** | -0.165*** | 0.013 | 0.086 |
| | [0.031] | [0.102] | [0.086] | [0.051] | [0.156] | [0.191] |
| Other Literature | -0.224*** | 0.097 | 0.005 | -0.210*** | -0.107 | 0.087 |
| | [0.028] | [0.062] | [0.066] | [0.040] | [0.086] | [0.098] |
| Philosophy | -0.264*** | 0.255*** | 0.113* | -0.325*** | 0.160*** | 0.051 |
| | [0.024] | [0.060] | [0.067] | [0.018] | [0.053] | [0.058] |
| Other Humanities | -0.161*** | 0.204** | 0.011 | -0.324*** | 0.069 | -0.078 |
| | [0.025] | [0.099] | [0.077] | [0.032] | [0.119] | [0.108] |
| Social Science | | | | | | |
| Economics | 0.054** | 0.093* | -0.093 | 0.101*** | -0.117*** | -0.062 |
| | [0.028] | [0.057] | [0.062] | [0.015] | [0.044] | [0.044] |
| Geography | -0.148*** | 0.125 | -0.023 | -0.044*** | 0.089 | 0.037 |
| | [0.025] | [0.099] | [0.085] | [0.017] | [0.080] | [0.057] |
| Political Science | -0.068*** | 0.066 | 0.004 | -0.028 | -0.093 | -0.043 |
| | [0.027] | [0.085] | [0.071] | [0.018] | [0.065] | [0.056] |
| Psychology | -0.167*** | 0.150*** | 0.042 | -0.118*** | -0.056 | -0.036 |
| | [0.014] | [0.056] | [0.045] | [0.018] | [0.078] | [0.056] |
| Sociology | -0.126*** | 0.130** | 0.030 | -0.069*** | -0.110 | -0.025 |
| | [0.017] | [0.066] | [0.055] | [0.021] | [0.080] | [0.066] |
| Public Admin. | 0.128*** | 0.026 | -0.079 | 0.161*** | -0.087 | -0.080 |
| | [0.021] | [0.085] | [0.078] | [0.016] | [0.072] | [0.074] |
| Commerce | 0.158*** | -0.043 | -0.019 | 0.199*** | -0.217*** | -0.156*** |
| | [0.017] | | [0.047] | [0.012] | [0.039] | [0.039] |
| Finance | 0.226*** | -0.087** | -0.063 | 0.253*** | -0.161*** | -0.073* |
| | [0.017] | [0.039] | [0.047] | [0.012] | [0.038] | [0.040] |
| Marketing | 0.134*** | 0.173* | -0.053 | 0.150*** | -0.090 | -0.086 |
| | [0.029] | [0.093] | [0.096] | [0.022] | [0.075] | [0.078] |
| Law | 0.359*** | -0.296*** | -0.109 | 0.439*** | -0.364*** | -0.130*** |
| | [0.020] | [0.083] | [0.067] | [0.014] | [0.056] | [0.050] |
| Other Soc Sci | -0.007 | 0.132** | -0.003 | -0.036 | -0.055 | -0.100 |
| | [0.016] | [0.052] | [0.058] | [0.025] | [0.080] | [0.091] |
| Agri. & Bio Science | | | | | | |
| Agriculture Sci | -0.221*** | 0.124 | 0.298** | -0.037 | -0.121* | -0.169* |
| | [0.041] | [0.101] | [0.139] | [0.024] | [0.065] | [0.095] |
| Biological Sci | -0.112*** | 0.231*** | 0.108* | -0.014 | -0.236*** | -0.055 |
| | [0.023] | [0.068] | [0.060] | [0.019] | [0.066] | [0.055] |
| Other Life Sci | -0.138*** | 0.105* | -0.037 | -0.065 | -0.008 | -0.077 |
| | [0.023] | [0.061] | [0.071] | [0.040] | [0.102] | [0.108] |
| Eng. & Applied Sci | | | | | | |
| Architecture | -0.290*** | 0.202* | 0.157 | -0.094*** | -0.095 | -0.157** |
| | [0.052] | [0.110] | [0.146] | [0.026] | [0.059] | [0.069] |
| Other Engineering | 0.112** | 0.152* | 0.319*** | 0.299*** | -0.106*** | -0.037 |
| | [0.046] | [0.086] | [0.113] | [0.014] | [0.037] | [0.039] |
| Chemical Eng | 0.400*** | -0.227* | 0.315* | 0.465*** | -0.190*** | -0.150** |
| | [0.070] | [0.123] | [0.181] | [0.027] | [0.066] | [0.072] |
| Civil Engineering | 0.158** | -0.060 | 0.144 | 0.276*** | -0.213*** | -0.043 |
| | [0.067] | [0.113] | [0.177] | [0.018] | [0.044] | [0.053] |
| Electrical Eng | 0.520*** | -0.155 | 0.115 | 0.408*** | -0.199*** | -0.148*** |
| | [0.084] | [0.127] | [0.146] | [0.017] | [0.041] | [0.044] |
| Mechanical Eng | 0.307*** | -0.108 | -0.201 | 0.329*** | -0.223*** | -0.052 |
| | [0.068] | [0.120] | [0.177] | [0.016] | [0.039] | [0.044] |
| Forestry | 0.051 | -0.043 | 0.020 | 0.288*** | -0.486*** | -0.091 |
| | [0.091] | [0.282] | [0.293] | [0.028] | [0.118] | [0.112] |
| Health Science | | | | | | |
| Medicine | 0.372*** | -0.069 | -0.028 | 0.327*** | -0.105* | 0.056 |
| | [0.026] | [0.063] | [0.067] | [0.025] | [0.063] | [0.066] |
| Nursing | 0.157*** | 0.177*** | 0.098** | 0.054 | 0.089 | -0.176 |
| | [0.014] | [0.040] | [0.047] | [0.051] | [0.117] | [0.146] |
| Public Health | 0.014 | 0.654** | -0.191 | 0.271** | -0.151 | 0.116 |
| | [0.089] | [0.282] | [0.239] | [0.131] | [0.348] | [0.329] |
| Medical Techn. | -0.029 | 0.170** | 0.007 | 0.018 | 0.010 | -0.089 |
| | [0.045] | [0.082] | [0.112] | [0.063] | [0.110] | [0.142] |
| Natural Science | | | | | | |
| Mathematics | 0.191*** | -0.054 | -0.116 | 0.212*** | -0.128** | -0.048 |
| | [0.031] | [0.074] | [0.072] | [0.020] | [0.057] | [0.055] |
| Computer Sci | 0.333*** | 0.148** | 0.079 | 0.257*** | 0.051 | -0.023 |
| | [0.029] | [0.064] | [0.064] | [0.016] | [0.045] | [0.043] |
| Chemistry | -0.003 | 0.066 | 0.146 | 0.140*** | -0.087 | -0.089 |
| | [0.050] | [0.085] | [0.107] | [0.027] | [0.060] | [0.065] |
| Physics | 0.178 | -0.029 | 0.211 | 0.096*** | -0.091 | -0.006 |
| | [0.114] | [0.171] | [0.221] | [0.031] | [0.069] | [0.077] |
| Earth Sci | 0.079 | 0.132 | 0.000 | 0.134*** | -0.030 | -0.120 |
| | [0.067] | [0.161] | [0.192] | [0.025] | [0.078] | [0.076] |
| Other Science | 0.042 | 0.055 | -0.030 | 0.077*** | -0.148** | -0.049 |
| | [0.035] | [0.077] | [0.084] | [0.023] | [0.060] | [0.059] |
| Trades & Technology | | | | | | |
| Trades | -0.016 | -0.363 | 0.242 | 0.323** | -0.314 | -0.455 |
| | [0.362] | [0.457] | [0.770] | [0.150] | [0.199] | [0.309] |
| Observations | | 120672 | | | 132974 | |
| R-squared | | 0.099 | | | 0.167 | |

Source: 1996 Canadian Census

Notes: Heteroskedastic consistent standard errors in brackets. Significance Level: * 10%; ** 5%; *** 1%

For immigrant females the differences from the Canadian-born are quite varied. There are relatively few statistically significant differences between the Canadian-born and Canadian educated immigrants, but where there are differences the immigrants tend to have higher earnings. In contrast, foreign educated immigrants have earnings that are sometimes above, and sometimes below, those of the Canadian-born in the same field. Interestingly, the differences tend to offset the low earnings of the Canadian-born in fine and applied arts, and literature and humanities (though this in not universal), but be more mixed in the high-paying engineering and applied sciences, health professions, and natural sciences. Overall, there appears to be less variance across fields for the foreign educated immigrants than for the Canadian-born females. Recall that each immigrant is also affected by the relevant immigrant coefficients seen in table 7. For the males the pattern is somewhat different. The coefficients for the Canadian educated immigrants are, like those for the females, not different from zero, which suggests that the field premium is the same as that for the Canadian-born, but all the differences are negative, not positive. Coefficients for the male foreign born fields also tend to be negative, when statistically significant, but are occasionally positive. In general, the coefficients tend to offset the extremes of the Canadian-born distribution, being negative for high earning fields, and positive for low earnings ones, though the number of negative coefficients is larger. Overall, for both sexes, the Canadian educated immigrants have returns to field of study that are more similar to the Canadian-born than to the foreign educated. However, for all except the Canadian educated immigrant females, the premiums of the highest paying fields tend to be muted relative to the Canadian-born. Conversely, immigrants in many of the lowest paying fields have higher earnings than their Canadian-born counterparts. It is worth noting that medicine shows very small differences across the groups, despite the much higher likelihood of immigrants having medical degrees, while there is a very substantial deficit for immigrants with law degrees.

## *IV.2 College Degree Certificate and Diploma Holders*

Unlike the set of regressions for those with a bachelor's degree, we only present the field of study and immigrant/intercept coefficients for those with college certification, and these are in table 9. Among the Canadian educated immigrants with a college degree, most of the immigrant field of study coefficients are not statistically different from zero, although there are a few notable exceptions, such as psychology and earth sciences, which have substantial premia for the female immigrants. Thus the Canadian educated immigrants have quite similar earnings premia across field of study as the Canadian-born. The foreign educated have greater differences from the Canadian-born, but most coefficients are still not different from zero. Unlike the females, for the males almost none of the statistically significant immigrant coefficients are positive. Perhaps somewhat more strongly than that seen at the bachelor's level, there is a broad pattern (though there are exceptions) whereby those fields that are higher earnings among the Canadian-born have a negative coefficient for both immigrant groups when the coefficient is different from zero. Thus, while the ranking of fields according to earnings is not substantially altered, the difference between the lowest and highest earning fields tends to be less extreme among the immigrant population.

TABLE 9 - 1996 COLLEGE EARNINGS

| | Female | | | Male | | |
|---|---|---|---|---|---|---|
| Variable | Cdn Born | Foreign Educ | Cdn Educ | Cdn Born | Foreign Educ | Cdn Educ |
| Immigrant/Intercept | 9.410*** | 0.017 | -0.032 | 9.601*** | 0.250*** | -0.014 |
| | [0.014] | [0.051] | [0.045] | [0.019] | [0.067] | [0.065] |
| Fine & Applied Arts | | | | | | |
| Fine Arts | -0.203*** | 0.069* | 0.080* | -0.112*** | -0.046 | -0.046 |
| | [0.014] | [0.040] | [0.046] | [0.020] | [0.057] | [0.068] |
| Humanities | | | | | | |
| Media Studies | 0.141*** | -0.138* | 0.070 | 0.073*** | -0.004 | -0.010 |
| | [0.022] | [0.081] | [0.084] | [0.023] | [0.091] | [0.086] |
| Literature | -0.002 | 0.118 | 0.191* | -0.067 | 0.097 | -0.047 |
| | [0.035] | [0.074] | [0.103] | [0.048] | [0.107] | [0.152] |
| Philosophy | -0.164*** | -0.082 | -0.041 | 0.000 | -0.069 | -0.061 |
| | [0.022] | [0.087] | [0.095] | [0.024] | [0.077] | [0.097] |
| Othr Humanities | -0.048 | 0.099 | 0.102 | -0.076 | -0.159 | 0.003 |
| | [0.051] | [0.122] | [0.152] | [0.048] | [0.135] | [0.186] |
| Social Science | | | | | | |
| Economics | 0.109 | 0.069 | 0.106 | 0.162*** | -0.026 | 0.050 |
| | [0.110] | [0.137] | [0.208] | [0.062] | [0.119] | [0.176] |
| Geography | 0.148** | -0.403 | 0.117 | 0.184*** | 0.076 | -0.082 |
| | [0.065] | [0.279] | [0.232] | [0.041] | [0.153] | [0.151] |
| Political Science | 0.205 | -0.026 | -0.067 | 0.052 | 0.205 | -0.437* |
| | [0.127] | [0.248] | [0.405] | [0.078] | [0.250] | [0.260] |
| Psychology | -0.160*** | 0.385*** | 0.206* | -0.079 | 0.122 | 0.229 |
| | [0.032] | [0.127] | [0.124] | [0.050] | [0.224] | [0.184] |
| Socology Crim | 0.152*** | 0.058 | 0.123 | 0.319*** | -0.443** | 0.028 |
| | [0.054] | [0.200] | [0.177] | [0.047] | [0.192] | [0.141] |
| Public Admin | 0.219*** | 0.008 | 0.037 | 0.172*** | -0.105* | 0.000 |
| | [0.016] | [0.054] | [0.062] | [0.020] | [0.063] | [0.074] |
| Commerce | 0.196*** | -0.007 | 0.053 | 0.271*** | -0.110** | -0.109* |
| | [0.013] | [0.037] | [0.043] | [0.018] | [0.055] | [0.064] |
| Finance | 0.172*** | -0.016 | 0.053 | 0.274*** | -0.063 | -0.055 |
| | [0.012] | [0.033] | [0.039] | [0.018] | [0.052] | [0.064] |
| Secretary Stud. | 0.070*** | 0.073** | 0.039 | 0.103*** | -0.058 | 0.169* |
| | [0.009] | [0.029] | [0.035] | [0.026] | [0.076] | [0.100] |
| Law | 0.245*** | 0.140 | -0.059 | 0.294*** | -0.158 | -0.128 |
| | [0.044] | [0.164] | [0.135] | [0.046] | [0.139] | [0.175] |
| Other Social Sci | 0.096*** | -0.092* | 0.021 | 0.335*** | -0.243*** | -0.006 |
| | [0.014] | [0.054] | [0.053] | [0.018] | [0.073] | [0.072] |
| Agricultural & Bio Sci | | | | | | |
| Agriculture Sci | -0.136*** | -0.076 | -0.077 | -0.039* | -0.022 | -0.030 |
| | [0.026] | [0.091] | [0.108] | [0.023] | [0.065] | [0.085] |
| Other Life Sci | 0.174*** | 0.055 | -0.096 | 0.219*** | -0.042 | 0.053 |
| | [0.055] | [0.155] | [0.166] | [0.052] | [0.165] | [0.190] |
| Home Ec. | -0.097*** | 0.000 | 0.057 | -0.065** | 0.104 | 0.161* |
| | [0.023] | [0.056] | [0.084] | [0.027] | [0.070] | [0.092] |
| Fisheries | -0.001 | -0.139 | 0.105 | 0.125*** | -0.048 | 0.169 |
| | [0.080] | [0.219] | [0.294] | [0.036] | [0.100] | [0.145] |
| Eng. & Applied Science | | | | | | |
| Forestry | 0.077 | 0.637 | -0.298 | 0.242*** | -0.345** | 0.005 |
| | [0.075] | [0.460] | [0.391] | [0.027] | [0.138] | [0.117] |
| Landscape Arch | 0.026 | 0.143 | 0.155 | 0.181*** | -0.065 | -0.040 |
| | [0.045] | [0.137] | [0.163] | [0.024] | [0.082] | [0.077] |
| Health Science | | | | | | |
| Nursing | 0.447*** | -0.095*** | -0.037 | 0.288*** | 0.048 | -0.197* |
| | [0.010] | [0.030] | [0.038] | [0.029] | [0.081] | [0.106] |
| Medical Assist. | 0.055*** | 0.061 | 0.053 | 0.028 | 0.049 | -0.062 |
| | [0.014] | [0.042] | [0.057] | [0.035] | [0.102] | [0.128] |
| Public Health | 0.463*** | -0.086 | 0.100 | 0.377*** | 0.074 | -0.047 |
| | [0.027] | [0.137] | [0.120] | [0.051] | [0.204] | [0.193] |
| Medical Techn. | 0.278*** | -0.091* | -0.134*** | 0.283*** | -0.098 | 0.099 |
| | [0.013] | [0.046] | [0.048] | [0.022] | [0.070] | [0.080] |
| Natural Science | | | | | | |
| Chemistry | 0.463*** | -0.337** | -0.177 | 0.438*** | -0.219** | 0.065 |
| | [0.078] | [0.139] | [0.183] | [0.043] | [0.107] | [0.130] |
| Physics | 0.144 | 0.447 | 0.423 | 0.257*** | 0.068 | -0.059 |
| | [0.232] | [0.397] | [1.040] | [0.099] | [0.200] | [0.285] |
| Earth Science | 0.213** | -0.211 | 0.690** | 0.282*** | -0.115 | 0.031 |
| | [0.092] | [0.251] | [0.351] | [0.039] | [0.114] | [0.148] |
| Other Science | 0.326*** | -0.328*** | -0.276*** | 0.198*** | -0.088 | -0.084 |
| | [0.030] | [0.085] | [0.104] | [0.032] | [0.094] | [0.102] |
| Trades & Technology | | | | | | |
| Building Tech. | 0.266*** | -0.028 | 0.027 | 0.311*** | -0.135** | -0.039 |
| | [0.043] | [0.099] | [0.122] | [0.019] | [0.057] | [0.070] |
| Trades | 0.074** | -0.026 | 0.045 | 0.198*** | 0.003 | 0.012 |
| | [0.035] | [0.089] | [0.112] | [0.017] | [0.050] | [0.062] |
| Electronics Tech | 0.187*** | -0.074* | 0.110** | 0.332*** | -0.100** | -0.029 |
| | [0.015] | [0.044] | [0.047] | [0.016] | [0.049] | [0.060] |
| Environ. Tech | 0.081 | 0.324 | 0.305 | 0.358*** | 0.021 | 0.007 |
| | [0.068] | [0.328] | [0.272] | [0.028] | [0.102] | [0.117] |
| Mechanic | 0.181*** | 0.016 | -0.132 | 0.320*** | -0.080 | -0.045 |
| | [0.045] | [0.116] | [0.164] | [0.017] | [0.049] | [0.062] |
| Transport Tech | 0.169*** | 0.145 | 0.044 | 0.359*** | -0.097* | 0.015 |
| | [0.043] | [0.106] | [0.154] | [0.020] | [0.053] | [0.068] |
| Observations | | 212061 | | | 169539 | |
| R-squared | | 0.066 | | | 0.083 | |

Source: 1996 Canadian Census

Notes: Heteroskedastic consistent standard errors in brackets. Significance Level: * 10%; ** 5%; *** 1%

Also included in the regression are 9 province of residence indicators,

23 census metropolitan area indicators, 3 census area indicators for BC, ON, and PQ, a fourth order polynomial in age, and all the regressors listed in Table 3.1a.

### *IV.3 Master's Degree Holders*

Table 10 presents coefficient estimates for those with a master's degree. The pattern is somewhat different from that observed at the bachelor's and college levels. Here, for both sexes and many of the fields, foreign educated immigrants are seen to do remarkably well relative to the Canadian-born, while the Canadian educated immigrants do less well.[10] However, despite the change in the ranking of Canadian and foreign educated immigrants relative to the Canadian-born, the general pattern of the Canadian-born coefficients remains quite similar to the coefficients for those with a bachelor's degree. That is, those with degrees in fine and applied arts, literature and humanities, traditional social sciences, and agricultural and biological sciences have lower earnings than the omitted (comparison) education field, while those in economics, and administration and commerce related fields tend to do better, as do those in engineering, health and natural sciences. However, especially for the females, the earnings advantage in engineering and particularly natural sciences is not found in as many fields as it was for those with a bachelor's degree. In terms of the ranking of broad fields of study, as seen in the combination of immigrant and Canadian-born coefficients, the pattern is similar to that for those with a bachelor's degree. Individuals with an arts or humanities degree, and to a lesser extent traditional social sciences, and agricultural or biological sciences, earn less, while those on the administrative and business side do better, as do those in engineering and health. Natural sciences is now more similar to the omitted group, except for mathematics and computer sciences. This pattern of the graduates from the sciences, business, administration and law having higher earnings than other graduates is common to all three levels of education, though it is somewhat less pronounced for the college group.

Overall, field of study is seen to be an important predictor of earnings at all three levels of education, with the more science and business related fields obtaining higher earnings, and humanities, agricultural and biological fields obtaining less, although each level has its own distinguishing features. Relative to bachelor's degrees, immigrants with master's degrees appear to have superior outcomes compared to their Canadian-born counterparts.

---

[10] Note that Canadian educated immigrants with a Master's degree may have had all of their education in Canada, or only that last degree.

TABLE 10 - 1996 MASTERS: EARNINGS

| | Female | | | Male | | |
|---|---|---|---|---|---|---|
| Variable | Cdn Born | Foreign Educ | Cdn Educ | Cdn Born | Foreign Educ | Cdn Educ |
| Immigrant/Intercept | 9.782*** | -1.000 | -0.079 | 9.747*** | 0.702 | 0.143** |
| | [0.046] | [0.922] | [0.077] | [0.040] | [0.447] | [0.061] |
| Fine & Applied Arts | | | | | | |
| Fine Arts | -0.629*** | 0.135 | -0.036 | -0.506*** | 0.302*** | -0.246** |
| | [0.040] | [0.086] | [0.108] | [0.039] | [0.087] | [0.110] |
| Lit. & Humanities | | | | | | |
| History | -0.299*** | -0.092 | 0.075 | -0.218*** | 0.266*** | -0.001 |
| | [0.057] | [0.114] | [0.128] | [0.037] | [0.092] | [0.094] |
| Media Studies | -0.136*** | -0.024 | 0.050 | -0.283*** | 0.466*** | -0.107 |
| | [0.029] | [0.085] | [0.081] | [0.009] | [0.104] | [0.109] |
| English | -0.329*** | 0.377*** | -0.030 | -0.230*** | 0.241** | -0.426*** |
| | [0.046] | [0.091] | [0.100] | [0.045] | [0.106] | [0.108] |
| French | -0.205*** | 0.444*** | -0.172 | -0.177* | 0.344 | -0.427* |
| | [0.072] | [0.167] | [0.178] | [0.096] | [0.212] | [0.256] |
| Other Literature | -0.275*** | 0.264*** | 0.076 | -0.237*** | 0.255** | -0.074 |
| | [0.055] | [0.091] | [0.102] | [0.063] | [0.113] | [0.118] |
| Philosophy | -0.514*** | 0.047 | 0.085 | -0.445*** | 0.337*** | -0.038 |
| | [0.040] | [0.116] | [0.123] | [0.023] | [0.062] | [0.069] |
| Other Humanities | -0.346*** | 0.194 | 0.010 | -0.324*** | 0.138 | -0.228 |
| | [0.054] | [0.143] | [0.146] | [0.058] | [0.150] | [0.150] |
| Social Science | | | | | | |
| Economics | 0.210*** | -0.310*** | -0.217 | 0.141*** | 0.034 | -0.215*** |
| | [0.058] | [0.098] | [0.134] | [0.030] | [0.066] | [0.080] |
| Geography | -0.123*** | -0.043 | -0.289** | -0.048 | 0.117 | -0.019 |
| | [0.047] | [0.137] | [0.131] | [0.032] | [0.095] | [0.096] |
| Political Science | -0.058 | -0.232* | -0.084 | -0.074* | 0.063 | -0.253** |
| | [0.061] | [0.131] | [0.150] | [0.040] | [0.100] | [0.103] |
| Psychology | -0.178*** | 0.072 | -0.028 | -0.134*** | 0.290*** | -0.107 |
| | [0.031] | [0.090] | [0.093] | [0.033] | [0.108] | [0.096] |
| Sociology Crim | -0.066 | 0.158 | -0.004 | -0.075 | -0.097 | -0.311** |
| | [0.053] | [0.121] | [0.137] | [0.046] | [0.130] | [0.131] |
| Public Admin | 0.196*** | -0.126 | 0.055 | 0.165*** | -0.132 | -0.051 |
| | [0.036] | [0.117] | [0.109] | [0.026] | [0.090] | [0.094] |
| Commerce | 0.258*** | 0.105 | 0.018 | 0.268*** | 0.059 | -0.152*** |
| | [0.030] | [0.083] | [0.078] | [0.019] | [0.052] | [0.051] |
| Finance | 0.239*** | -0.076 | 0.012 | 0.268*** | 0.052 | -0.133* |
| | [0.055] | [0.102] | [0.121] | [0.028] | [0.064] | [0.077] |
| Marketing | 0.173** | -0.118 | -0.554*** | 0.193*** | 0.156 | -0.353** |
| | [0.081] | [0.228] | [0.201] | [0.053] | [0.136] | [0.148] |
| Law | 0.147*** | 0.000 | 0.167 | 0.369*** | -0.246*** | -0.258*** |
| | [0.051] | [0.121] | [0.138] | [0.030] | [0.087] | [0.087] |
| Other Soc Sci | -0.128*** | 0.199** | 0.126 | -0.044 | 0.063 | -0.092 |
| | [0.028] | [0.081] | [0.078] | [0.034] | [0.095] | [0.098] |
| Agri. & Bio Science | | | | | | |
| Agricultural Sci | -0.099 | -0.171 | -0.056 | -0.127** | 0.040 | 0.045 |
| | [0.104] | [0.176] | [0.240] | [0.055] | [0.103] | [0.165] |
| Biological Sci | -0.230*** | 0.194* | 0.013 | -0.080** | 0.295*** | -0.039 |
| | [0.051] | [0.106] | [0.116] | [0.040] | [0.108] | [0.110] |
| Other Life Sci | -0.228*** | 0.193 | -0.137 | -0.004 | 0.165 | -0.035 |
| | [0.065] | [0.122] | [0.166] | [0.063] | [0.131] | [0.168] |
| Eng. & Applied Sci | | | | | | |
| Architecture | -0.356*** | 0.301* | -0.798*** | -0.263*** | 0.416*** | -0.158 |
| | [0.100] | [0.163] | [0.277] | [0.053] | [0.091] | [0.126] |
| Other Engineering | -0.078 | 0.328*** | 0.494** | 0.224*** | 0.182*** | -0.130** |
| | [0.080] | [0.120] | [0.212] | [0.028] | [0.053] | [0.062] |
| Chemical Eng | 0.316* | -0.074 | -0.064 | 0.352*** | 0.084 | -0.182 |
| | [0.174] | [0.246] | [0.330] | [0.062] | [0.099] | [0.126] |
| Civil Engineering | 0.111 | -0.395** | 0.031 | 0.276*** | -0.010 | -0.202** |
| | [0.139] | [0.183] | [0.256] | [0.038] | [0.066] | [0.089] |
| Electrical Eng | 0.229 | -0.101 | 0.318 | 0.222*** | 0.336*** | 0.011 |
| | [0.184] | [0.218] | [0.327] | [0.040] | [0.066] | [0.081] |
| Mechanical Eng | 0.134 | 0.045 | 0.438 | 0.289*** | 0.136** | -0.175* |
| | [0.162] | [0.198] | [0.411] | [0.047] | [0.068] | [0.090] |
| Forestry | -0.143 | -0.624 | 0.426 | 0.179** | -0.300* | -0.228 |
| | [0.196] | [0.500] | [0.567] | [0.076] | [0.173] | [0.211] |
| Health Science | | | | | | |
| Medicine | 0.271*** | 0.102 | 0.196* | 0.583*** | 0.217*** | -0.078 |
| | [0.050] | [0.097] | [0.112] | [0.034] | [0.074] | [0.080] |
| Other Health | 0.046 | 0.071 | 0.069 | 0.098 | 0.174 | -0.145 |
| | [0.028] | [0.079] | [0.084] | [0.065] | [0.132] | [0.162] |
| Natural Science | | | | | | |
| Mathematics | 0.081 | 0.252* | -0.062 | 0.124*** | 0.106 | -0.152 |
| | [0.087] | [0.131] | [0.184] | [0.044] | [0.066] | [0.101] |
| Computer Science | 0.151 | 0.294** | 0.052 | 0.188*** | 0.338*** | 0.026 |
| | [0.101] | [0.133] | [0.177] | [0.043] | [0.071] | [0.068] |
| Chemistry | 0.094 | 0.208 | -0.004 | 0.017 | 0.202** | -0.137 |
| | [0.102] | [0.139] | [0.195] | [0.057] | [0.098] | [0.127] |
| Physical Science | 0.139 | 0.148 | 0.232 | 0.040 | 0.219** | -0.124 |
| | [0.205] | [0.254] | [0.358] | [0.055] | [0.097] | [0.119] |
| Earth Science | -0.027 | -0.002 | 0.340 | 0.041 | 0.095 | -0.091 |
| | [0.094] | [0.175] | [0.266] | [0.044] | [0.090] | [0.106] |
| Other Science | -0.076 | -0.002 | 0.013 | -0.084 | 0.468*** | -0.095 |
| | [0.100] | [0.185] | [0.210] | [0.066] | [0.137] | [0.151] |
| Observations | | 26439 | | | 40865 | |
| R-squared | | 0.163 | | | 0.186 | |

Source: 1996 Canadian Census

Notes: Heteroskedastic consistent standard errors in brackets. Significance Level: * 10%; ** 5%; *** 1%. Also included in the regression are 9 province of residence indicators, 23 census metropolitan area indicators, 3 census area indicators for BC, ON, and PQ, a fourth order polynomial in age, and all the regressors listed in Table 3.1a.

### *IV.4 Predicted Annual Earnings by Field*

To facilitate comparisons across fields, sex, and the location where immigrants received their education, predicted annual earnings for each group are presented in table 11, for females, and 12 for males. These predictions are generated from the regressions presented in tables 7 through 10, with the transformation to dollars from the log-earnings regressions made using Duan's (1983) smearing approach. The predictions are for a person who is forty years old (and hence on the flat portion of the age-earnings profile), and all other relevant characteristics that do not define the prediction (e.g., excluding the field variables), and are not specific to immigrants (e.g., place of residence or language knowledge), set at the mean for the sample containing all three groups. Of those characteristics that are specific to immigrants, the arrival cohort and place of origin are set at the combined sample mean of the two immigrant groups, while the age at immigration variable is set to the 16 to 20 age group. The age at immigration variable is treated differently because it does not entirely overlap for each immigrant group.

Note that, for both immigrant groups, the average earnings predicted for those with a bachelor's degree in education are lower than the mean for the Canadian born, despite the immigrant coefficients in table 7 not being statistically significant. This also differs, especially for the Canadian educated, from that seen in tables 4 and 6. (Of course, the samples are not directly comparable since the predictions are for those who work, whereas the descriptive statistics include those who do not.) This is in part because the immigrant specific variables (cohort, age at immigration, and place of origin) imply an earnings deficit relative to the Canadian-born. But, more importantly, this counterfactual forces the immigrants and Canadian born to have the same set of characteristics, whereas as seen in the descriptive statistics, immigrants tend to have characteristics associated with higher earnings (they tend to live in cities and high wage provinces, the foreign educated are older). The same effect is present in all predictions in each column; any changes within a column are due to the field of study coefficients exclusively, while movements across columns also follow from the "background" coefficients in the regressions, some of which are presented in table 7. These predictions, therefore, reflect the expected (or average) nominal annual earnings in 1995 for a 40 year old with "average" characteristics.

TABLE 11

*PREDICTED EARNINGS*

*for workers*

1996 CANADIAN CENSUS - FEMALES

| | Canadian Born | | | Foreign Educated Immigrants | | | Canadian Educated Immigrants | | |
|---|---|---|---|---|---|---|---|---|---|
| Field | College | Bachelor | Master's | College | Bachelor | Master's | College | Bachelor | Master's |
| Education | | | | | | | | | |
| Education | 23179 | 36769 | 49501 | 18940 | 25669 | 37062 | 20714 | 28130 | 41082 |
| Fine & AppliedArts | | | | | | | | | |
| FineArt | 18928 | 22759 | 26397 | 16570 | 20417 | 22625 | 18321 | 17712 | 21124 |
| Literature & Humanities | | | | | | | | | |
| History | | 31267 | 36724 | | 23750 | 25073 | | 27054 | 32854 |
| Media | 26683 | 33676 | 43187 | 18993 | 25947 | 31574 | 25586 | 25377 | 37675 |
| English | - | 30083 | 35622 | - | 25923 | 38877 | - | 23423 | 28704 |
| French | - | 33142 | 40327 | - | 22167 | 47049 | - | 30199 | 28186 |
| Other Literature | 23130 | 29387 | 37585 | 21276 | 22614 | 36637 | 25018 | 22594 | 33671 |
| Philosophy Theology | 19683 | 28224 | 29596 | 14824 | 25422 | 23219 | 16884 | 24181 | 26734 |
| Other Humanities | 22088 | 31307 | 35034 | 19917 | 26796 | 31846 | 21849 | 24206 | 29369 |
| Social Science | | | | | | | | | |
| Economics | 25855 | 38819 | 61066 | 22641 | 29750 | 33531 | 25693 | 27056 | 40813 |
| Geography | 26867 | 31717 | 43759 | - | 25095 | 31369 | - | 23703 | - |
| Political Science | - | 34337 | 46699 | - | 25605 | 27717 | - | 26363 | 35633 |
| Psychology | 19761 | 31129 | 41444 | 23720 | 25256 | 33343 | 21689 | 24838 | 33460 |
| Sociology Criminology | 26992 | 32418 | 46351 | 23369 | 25785 | 40644 | 27277 | 25569 | 38328 |
| Specialized Admin. | 28856 | 41807 | 60241 | 23779 | 29942 | 39772 | 26747 | 29548 | 52803 |
| Commerce | 28185 | 43081 | 64044 | 22862 | 28798 | 53261 | 26568 | 32345 | 54099 |
| Finance | 27530 | 46098 | 62874 | 22147 | 29506 | 43642 | 25947 | 33110 | 52786 |
| Secretarial Studies | 24854 | | | 21838 | | | 23106 | | |
| Marketing | - | 42057 | 58864 | - | 34902 | - | - | - | 28087 |
| Law | 29627 | 52634 | 57318 | 27851 | 27333 | 42922 | 24966 | 36119 | 56203 |
| Other Social Science | 25507 | 36496 | 43541 | 19016 | 29066 | 39777 | 23279 | 27837 | 40993 |
| Agricultural & BioScience | | | | | | | | | |
| Agriculture | 20235 | 29487 | 44813 | 15328 | 23295 | 28291 | 16747 | 30390 | - |
| Biology | | 32883 | 39342 | | 28918 | 35745 | | 28018 | 33065 |
| Other Life Science | 27587 | 32028 | 39391 | 23824 | 24839 | 35778 | 22402 | 23606 | 28501 |
| Household Science | 21037 | | | 17189 | | | 19893 | | |
| Fish Wildlife Manage | 23163 | | | 16465 | | | 22990 | | |
| Engineer&Applied Science | | | | | | | | | |
| Architecture | | 27507 | - | | 23506 | 35056 | | 24633 | - |
| Other Engineering | - | 41116 | 45802 | - | 33422 | 47588 | | 43283 | - |
| Chemical Engineering | | 54866 | - | | 30527 | 47235 | | 57536 | - |
| Civil Engineering | | 43071 | - | | 28319 | 27890 | | 38049 | - |
| Electrical Engineering | | 61865 | - | | 36983 | 42103 | | 53107 | - |
| Mechanical Engineer | | 49957 | - | | 31295 | 44358 | | - | - |
| Forestry | 25024 | 38706 | - | - | - | - | - | - | - |
| Landscape Architect | 23793 | | | 22424 | | | 24820 | | |
| Health Professions | | | | | | | | | |
| Medicine | | 53350 | 64900 | | 34773 | 53803 | | 39690 | 65521 |
| Other Health | | | 51832 | | | 41661 | | | 46082 |
| Nursing | 36240 | 43039 | | 26928 | 35857 | | 31197 | 36310 | |
| Medical Assistant | 24485 | | | 21272 | | | 23078 | | |
| Public Health | 36845 | 37277 | | 27628 | - | | 36372 | - | |
| Rehab. Medicine | - | - | - | - | - | - | - | - | - |
| Medical Technician | 30596 | 35724 | | 22836 | 29567 | | 23923 | 27517 | |
| Math & Physical Sciences | | | | | | | | | |
| Mathematics | | 44525 | 53694 | | 29441 | 51730 | | 30326 | 41896 |
| Computer Science | | 51288 | 57544 | | 41523 | 57828 | | 42458 | 50316 |
| Chemistry | 36810 | 36671 | - | 21465 | 27337 | 50108 | 27569 | 32457 | 44927 |
| Physics | - | - | - | - | 29766 | 49420 | - | - | - |
| Earth Science | 28667 | 39793 | - | - | 31696 | 36003 | - | 30446 | - |
| Other Science | 32104 | 38345 | 45899 | 18905 | 28291 | 34299 | 21781 | 28473 | 38581 |
| Other | | | | | | | | | |
| Trades | 24950 | - | | 19871 | 17578 | - | 23326 | - | |
| Electronic Technology | 27945 | | | 21208 | | | 27886 | | |
| Environment Tech | 25142 | | | 28394 | | | - | | |
| Mechanic | 27787 | | | 23082 | | | 21759 | | |
| Transport Technology | 27434 | | | 25915 | | | 25631 | | |

Source: 1996 Canadian Census. Dashes imply that the cell contents are suppressed for reasons of confidentiality.

Focussing first on the predictions for females in table 11, three patterns are apparent. First, there is a clear trend to higher earnings with increasing education, from college to bachelor's to master's degrees. However, note that many of the health, physical science and trades fields at the college (bachelor's level) have earnings that are comparable or higher than the lower earnings humanities and fine arts university (master's) fields. Second, earnings among the Canadian-born typically exceed those of both immigrant groups when comparing the same field and level of education. However, no strong statements can be made regarding the two immigrant groups earnings rankings. Usually they are quite close, but which has higher earnings varies across field of study. It is important to recall that these are predictions for annual earnings, and can vary because of the hourly wage, hours per week, and weeks per year. Third, in general, while the same fields that are high earning in one column are also in another, as observed for the regression output, there appears to be less variance across fields for the immigrant groups than for the Canadian-born.

Looking next at the predictions for the males in table 12, the same three patterns observed for the females are obvious. As is commonly observed, mean earnings for males exceed those for females. Note that in some cases, especially at the master's level, immigrants in particular fields have the same or greater earnings than their Canadian-born counterparts. Examples of this include the foreign educated with master's degrees in medicine and architecture. In other fields, notably law, immigrants have substantial earnings deficits relative to the Canadian-born.

TABLE 12

*PREDICTED EARNINGS*

*for workers*

1996 CANADIAN CENSUS - MALES

|  | Canadian Born |  |  | Foreign Educated Immigrants |  |  | Canadian Educated Immigrants |  |  |
|---|---|---|---|---|---|---|---|---|---|
| Field | College | Bachelor | Master's | College | Bachelor | Master's | College | Bachelor | Master's |
| Education |  |  |  |  |  |  |  |  |  |
| Education | 34508 | 51728 | 61029 | 32361 | 45492 | 49786 | 33566 | 42901 | 62006 |
| Fine & AppliedArts |  |  |  |  |  |  |  |  |  |
| FineArt | 30857 | 30916 | 36812 | 27623 | 31298 | 40601 | 28657 | 25737 | 29238 |
| Literature & Humanities |  |  |  |  |  |  |  |  |  |
| History |  | 45035 | 49052 |  | 38091 | 52211 |  | 35595 | 49805 |
| Media | 37124 | 42134 | 45995 | 34688 | 36890 | 59792 | 35745 | 35800 | 42006 |
| English | - | 40430 | 48475 | - | 36857 | 50340 | - | 29499 | 32162 |
| French | - | - | - | - | - | - | - | - | - |
| Other Literature | 32274 | 41943 | 48131 | 33363 | 33155 | 50668 | - | 37939 | 45406 |
| Philosophy Theology | 34515 | 37359 | 39093 | 30214 | 38573 | 44664 | 31586 | 32604 | 38251 |
| Other Humanities | 31978 | 37413 | 44153 | 25578 | 35247 | 41363 | 31193 | 28698 | 35717 |
| Social Science |  |  |  |  |  |  |  |  |  |
| Economics | 40559 | 57224 | 70300 | 37047 | 44783 | 59314 | 41494 | 44595 | 57582 |
| Geography | 41470 | 49510 | 58197 | 41951 | 47569 | 53381 | - | 42588 | 57991 |
| Political Science | 36353 | 50312 | 56698 | - | 40335 | 49261 | - | 39978 | 44728 |
| Psychology | 31894 | 45992 | 53392 | - | 38249 | 58201 | 39017 | 36782 | 48760 |
| Sociology Criminology | 47468 | 48288 | 56598 | 28596 | 38042 | 41889 | 47464 | 39066 | 42133 |
| Specialized Admin. | 40987 | 60764 | 71972 | 34596 | 48993 | 51438 | 39855 | 46523 | 69496 |
| Commerce | 45270 | 63118 | 79803 | 38021 | 44671 | 69032 | 39468 | 44796 | 69656 |
| Finance | 45391 | 66606 | 79757 | 39969 | 49888 | 68509 | 41796 | 51328 | 70938 |
| Secretarial Studies | 38258 |  |  | 33852 |  |  | 44084 |  |  |
| Marketing |  | 60123 | 74037 |  | 48342 | 70588 |  | 45773 | 52854 |
| Law | 46291 | 80270 | 88305 | 37058 | 49036 | 56317 | 39625 | 58433 | 69282 |
| Other Social Science | 48220 | 49914 | 58378 | 35456 | 41540 | 50721 | 46606 | 37475 | 54092 |
| Agricultural & BioScience |  |  |  |  |  |  |  |  |  |
| Agriculture | 33194 | 49861 | 53747 | 30463 | 38852 | 45657 | 31332 | 34937 | 57102 |
| Biology |  | 50992 | 56310 |  | 35415 | 61688 |  | 40013 | 55016 |
| Other Life Science | 42950 | 48493 | 60765 | 38635 | 42309 | 58474 | 44059 | 37226 | 59605 |
| Household Science | 32351 |  |  | 33664 |  |  | 36968 |  |  |
| Fish Wildlife Manage | 39097 |  |  | 34945 |  |  | 45024 |  |  |
| Engineer&Applied Science |  |  |  |  |  |  |  |  |  |
| Architecture |  | 47085 | 46908 |  | 37653 | 58003 |  | 33371 | 40712 |
| Other Engineering |  | 69742 | 76387 | - | 55152 | 74788 | - | 55764 | 68119 |
| Chemical Engineering |  | 82317 | 86761 |  | 59892 | 76956 |  | 58776 | 73507 |
| Civil Engineering |  | 68164 | 80441 |  | 48463 | 64948 |  | 54139 | 66762 |
| Electrical Engineering |  | 77789 | 76228 |  | 56088 | 86981 |  | 55651 | 78278 |
| Mechanical Engineer |  | 71907 | 81460 |  | 50599 | 76136 |  | 56611 | 69454 |
| Forestry | 43935 | 69000 | 73024 | 29181 | 37323 | 44126 | 42933 | 52257 | - |
| Landscape Architect | 41357 |  |  | 36337 |  |  | 38653 |  |  |
| Health Professions |  |  |  |  |  |  |  |  |  |
| Medicine |  | 71740 | 109318 |  | 56821 | 110843 |  | 62913 | 102741 |
| Other Health |  |  | 67339 |  |  | 65371 |  |  | 59175 |
| Nursing | 46017 | 54595 |  | 45268 | 52501 |  | 36768 | 37971 |  |
| Medical Assistant | 35495 |  |  | 34973 |  |  | 32436 |  |  |
| Public Health | 50301 | - |  | 50820 | - |  | 46703 | - |  |
| Rehab. Medicine | - | - | - | - | - | - | - | - | - |
| Medical Technician | 45790 | 52685 |  | 38932 | 46808 |  | 49182 | 39980 |  |
| Math & Physical Sciences |  |  |  |  |  |  |  |  |  |
| Mathematics |  | 63949 | 69094 |  | 49473 | 62676 |  | 50527 | 60292 |
| Computer Science |  | 66870 | 73660 |  | 61901 | 84216 |  | 54171 | 76782 |
| Chemistry | 53466 | 59507 | 62099 | 40274 | 47987 | 61983 | 55475 | 45154 | 55013 |
| Physics | - | 56918 | 63514 | 44791 | 45694 | 64487 | - | 46944 | 57009 |
| Earth Science | 45769 | 59168 | 63560 | 38258 | 50516 | 57030 | 45905 | 43501 | 58983 |
| Other Science | 42063 | 55874 | 56101 | 36122 | 42399 | 73087 | 37635 | 44120 | 51824 |
| Other |  |  |  |  |  |  |  |  |  |
| Trades | 42071 | 71466 | - | 39584 | 45908 | - | 41399 | - | - |
| Electronic Technology | 48113 |  |  | 40837 |  |  | 45484 |  |  |
| Environment Tech | 49349 |  |  | 47246 |  |  | 48322 |  |  |
| Mechanic | 47526 |  |  | 41150 |  |  | 44176 |  |  |
| Building Technology | 47112 |  |  | 38596 |  |  | 44068 |  |  |
| Transport Technology | 49394 |  |  | 42020 |  |  | 48787 |  |  |
| Other Fields | 42277 | 53517 | 50285 | 36508 | 52038 | 61306 | 38828 | 51308 | 58533 |

Source: 1996 Canadian Census. Dashes imply that the cell contents are suppressed for reasons of confidentiality.

## *V. Economic Integration by Broad Field of Study*

A cross-sectional perspective can answer most of the questions related to field of study, which is primarily a cross-sectional issue, and therefore that is what is presented in the previous sections.[11] However, this section looks at issues of economic integration that involve examining how immigrant outcomes vary with years since migration for those who are foreign educated. The Canadian educated are not presented to conserve space, but the results are broadly similar. The results are presented graphically in figures 1 through 6, and are derived from regressions using the three censuses merged. Rather than plot a single profile for all the individual fields, earnings profiles are presented for each of the broad fields of study (e.g., engineering) by years since migration for each sex and level of education. These are predictions at the mean characteristics where only the years since migration variable varies across data points. The arrival cohorts are grouped into five year intervals (in accord with the time between each census), and the profiles, therefore, are comprised of predictions for each entry cohort (in five year groupings), in each census year. Each entry cohort thus has up to three data points, one corresponding to each of the three censuses. All of the earlier entry cohorts have three observations, but the most recent two cohorts, on the extreme left of each plot, have only one or two data points since they are observed only once or twice. Each set of (up to) three points trace out a portion of the profile, and together these sets of segments trace out the entire years-since-migration profile, though only the points for each cohort are connected. Formally, the regression underlying each graph is of the form:

$$\begin{aligned}\ln(\mathit{earnings}) = {} & X_{all}\beta_{all} + X_{imm}\beta_{imm} + \\ & \sum_{field}\sum_{cohort}\sum_{census}(cohort_i * census_t * field_f)\beta_{field.YSM.cohort} + \varepsilon\end{aligned} \qquad \textbf{(2)}$$

where i indexes the set of cohorts, f fields, and t censuses; YSM is years since migration and is equal to the census minus the cohort. $X_{\mathrm{all}}$ is a vector of regressors common to immigrants and the Canadian born, as outlined in section IV (note, in particular, that this includes a quartic polynomial in age), and $X_{\mathrm{immig}}$ are the immigrant-specific regressors including the immigrant indicator variable. The cohort and census variables are indicators for entry cohort and the census year to which the observation belongs. It is predictions from this regression, based on selecting the relevant $_{\mathrm{field,\ YSM,\ cohort}}$ coefficients, while holding both sets of X's constant at their means (rounded to one decimal place), that are plotted in the graphs. We plot a different graph for each field, and lines connecting the common cohorts as they are observed at successive years since migration (YSM).While this is graphical, which makes the profile quite clear, and uses three censuses, it is very similar to the approach employed by Baker and Benjamin (1994) in that each cohort's integration profile is traced out by indicator variables.

Recall the implication of the logarithmic scale that is employed; ln($22000) is approximately 10, and ln($36000) is about 10.5. Thus, the variation observed in the figures is quite substantial. All of the graphs use a common scale to facilitate comparisons, with the y-axis plotting ln(earnings) in constant 1996 dollars, and the x-axis years since migration. These plots are predictions, at mean characteristics, from regressions akin to those presented in section IV, but with years since migration replacing age at migration. Only the years since migration variable adjusts across each profile. Naturally, individuals would experience different (generally steeper) profiles since, for each, age and experience grow jointly with years since migration.

---

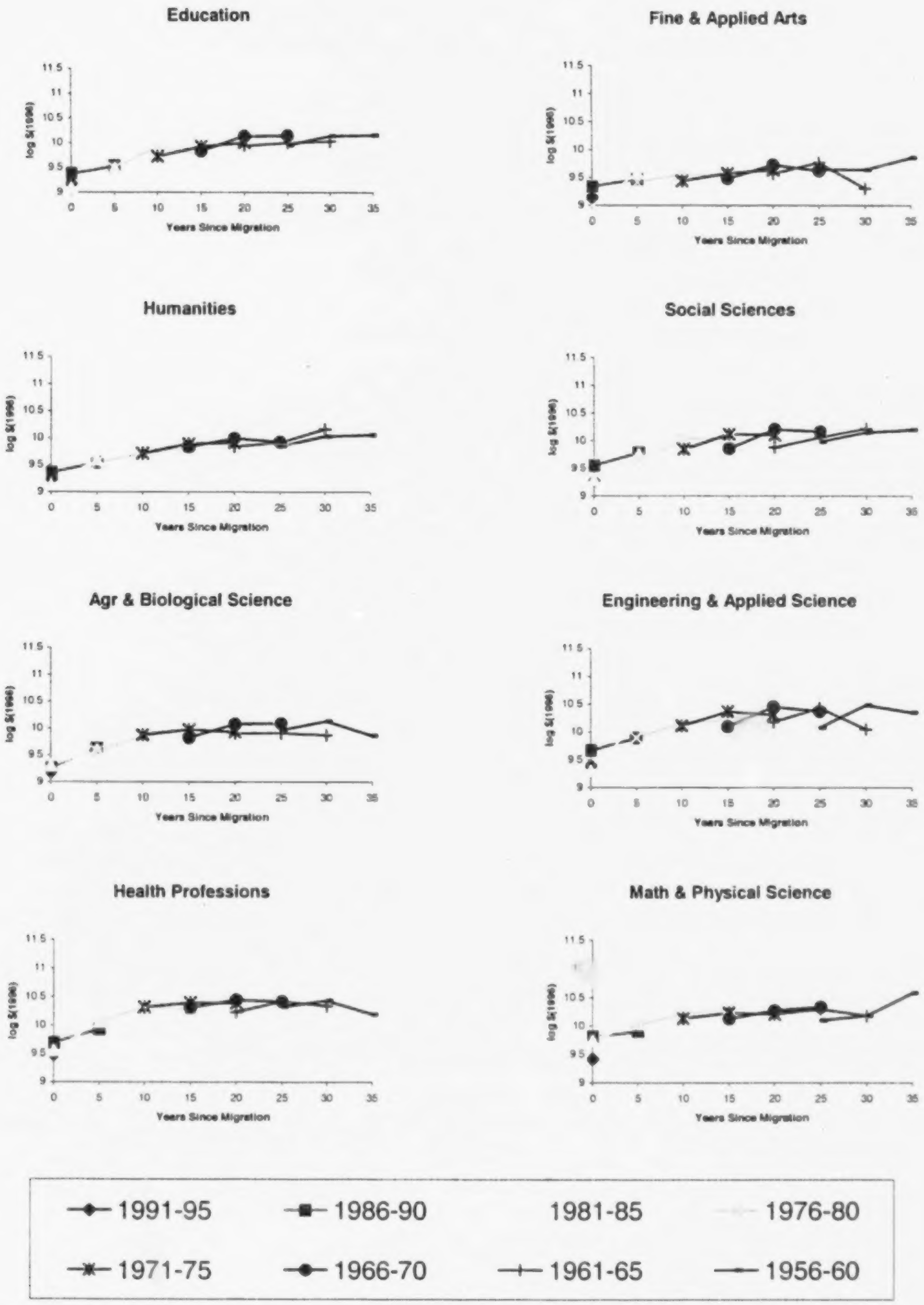
[11] As mentioned earlier, the same analysis was conducted for the 1986 and 1991 censuses, and the results were quite similar.

Figure 1 presents the profiles for females with a bachelor's degree. Recall that these plots are counterfactuals in that all other factors are held constant and the 'pure' effect of years since migration is studied with the Canadian-born being used as a comparison group. It is usually believed that immigrants, on average and relative to the Canadian-born, experience a negative earnings 'entry effect' associated with the disruption of migration. Subsequently, however, their average earnings increase more rapidly than those of the Canadian-born so that immigrants integrate economically (or 'assimilate' in the U.S. literature) as their earnings converge to, or surpass, those of the Canadian-born. All of the fields appear to experience economic integration, except perhaps that for those in fine and applied arts where the profile is quite shallow. The higher earning fields of study seem to have integration profiles that plateau around 10 years after immigration, while the lower paying ones, such as education and humanities, continue to grow across the graph. For males, in figure 2, the plots are noticeably higher, and there is not strong evidence of the profiles ever hitting a plateau. The fine and applied arts plot is jagged because the sample is quite small. Health professions appear to take a strong downward turn in 1996. We investigated this latter effect and it appears to certainly exist in the data and to originate in health fields other than medicine; perhaps it is related to the large cutbacks in healthcare expenditures in the same period.

Unlike those with a bachelor's degree, females with a college degree do not appear to have as pronounced an economic integration profile, or at least it plateaus very quickly, as seen in figure 3. Also, some of the broad fields, especially engineering and applied science, have relatively few observations and are quite noisy. For males, in figure 4, a similar pattern is observed overall, though there is a much larger sample in engineering and applied science. When we look at those with a master's degree, in figure 5 for males and 6 for females, the samples are smaller and the plots somewhat noisier. However, the profiles are clearly higher; in the health professions the curve peaks at around $100,000 (or ln(earnings)=11.5) annual earnings for the males.

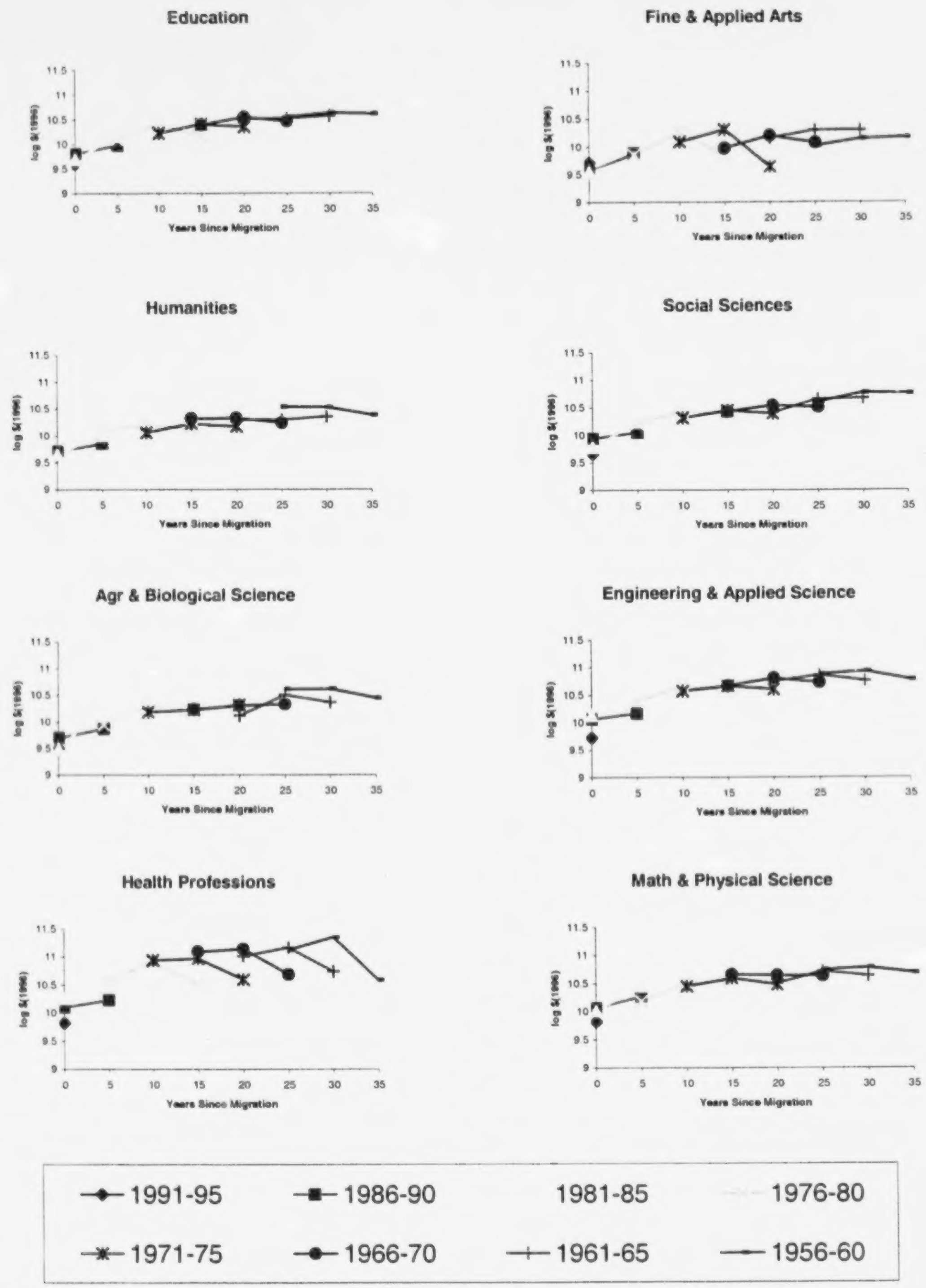
Overall, the plots portray the large differences that exist across field of study in both level and profile, and show that many of these differences across fields appear to be relatively stable with years since migration (though perhaps fine and applied arts graduates have increasingly lower earnings as years since migration increases). Compare, for example, female engineering and humanities graduates; both have sizeable integration profiles, but they are similar (in percent since these are logarithmic plots) and the gap remains roughly constant with science earning more. Graduates from some fields, typically the science-oriented fields and business and administration related fields in social sciences, clearly have much higher earnings than others and this earnings gap is maintained as time in Canada increases.

## Figure 1 - Females with a Foreign Bachelor's Degree



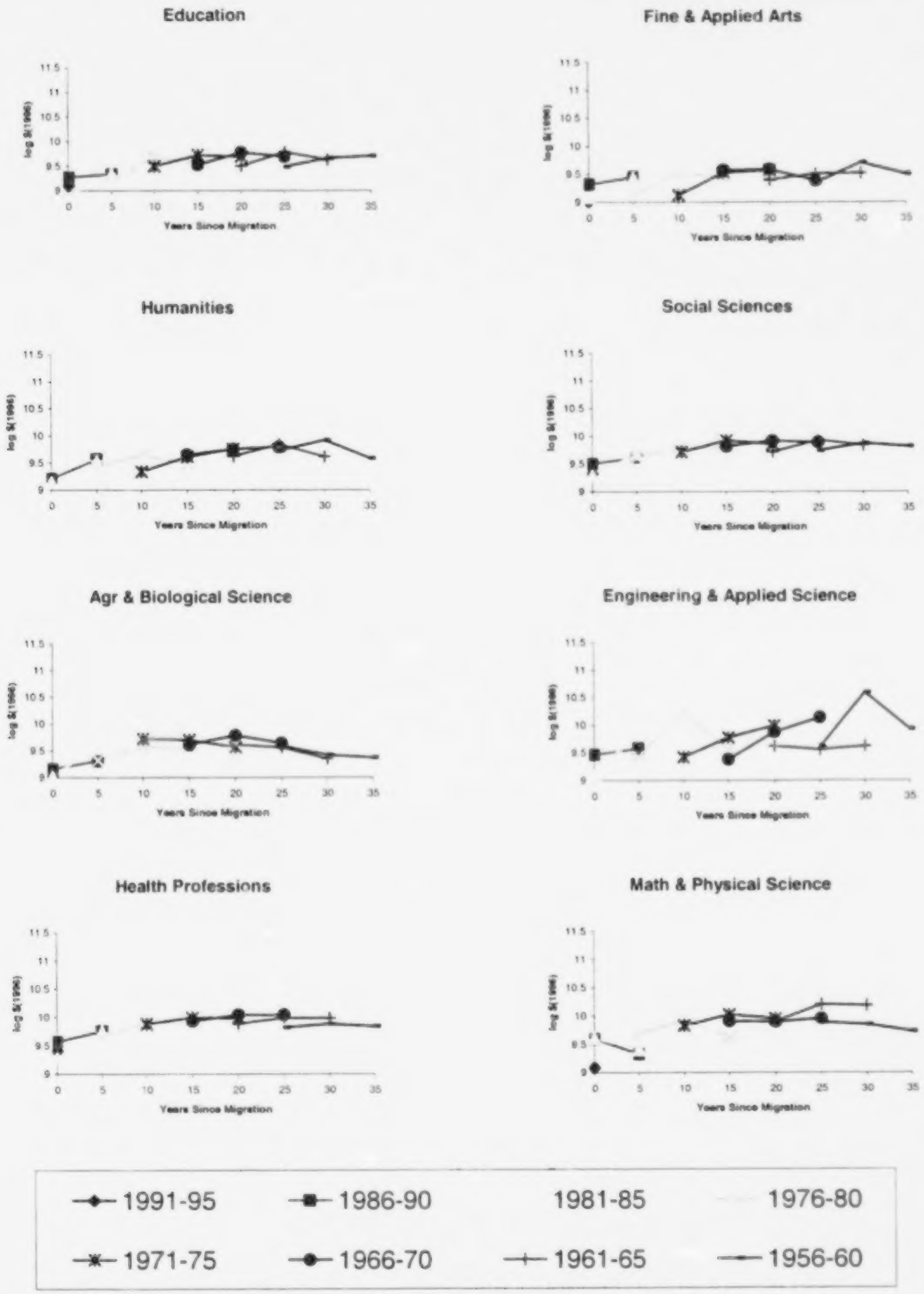
Note: Each line segment follows a 5 year immigrant entry cohort over time using the 1986, 1991 and 1996 censuses. Data points are predictions from regressions that control for the variables described in the text, including cohort effects that are common across fields.

## Figure 2 - Males with a Foreign Bachelor's Degree



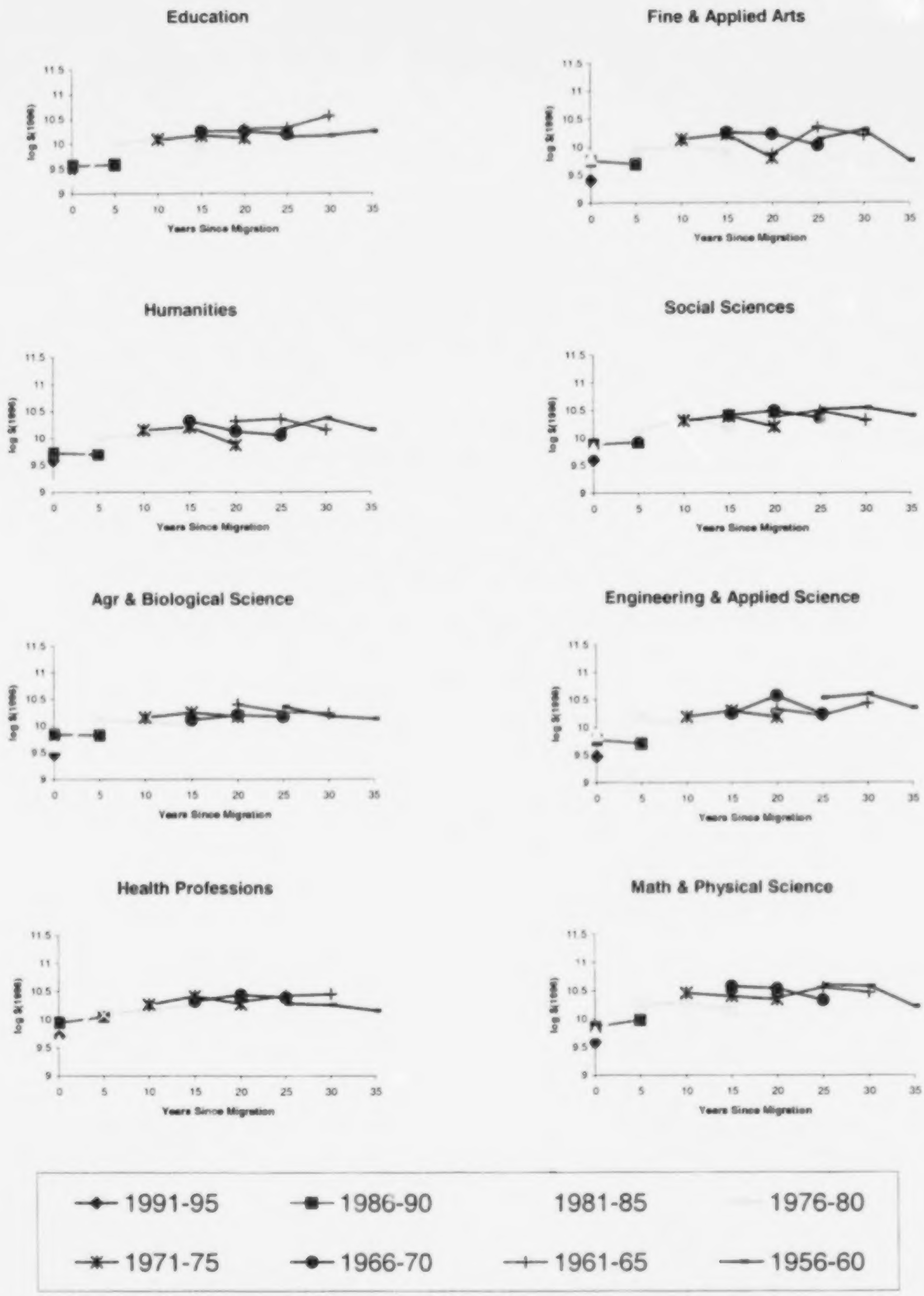
Note: Each line segment follows a 5 year immigrant entry cohort over time using the 1986, 1991 and 1996 censuses. Data points are predictions from regressions that control for the variables described in the text, including cohort effects that are common across fields.

## Figure 3 - Females with a Foreign College Certificate



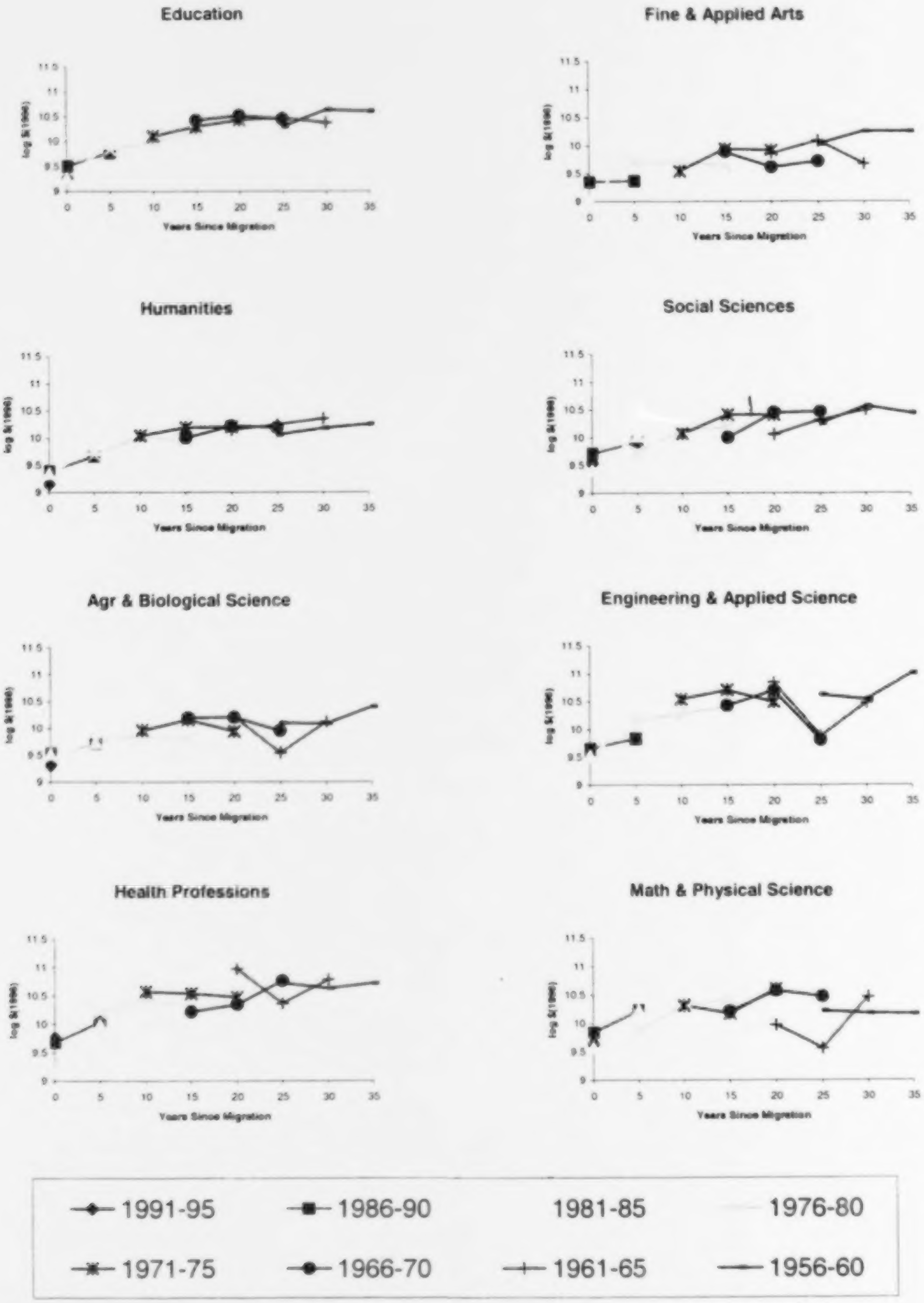
Note: Each line segment follows a 5 year immigrant entry cohort over time using the 1986, 1991 and 1996 censuses. Data points are predictions from regressions that control for the variables described in the text, including cohort effects that are common across fields.

## Figure 4 - Males with a Foreign College Certificate



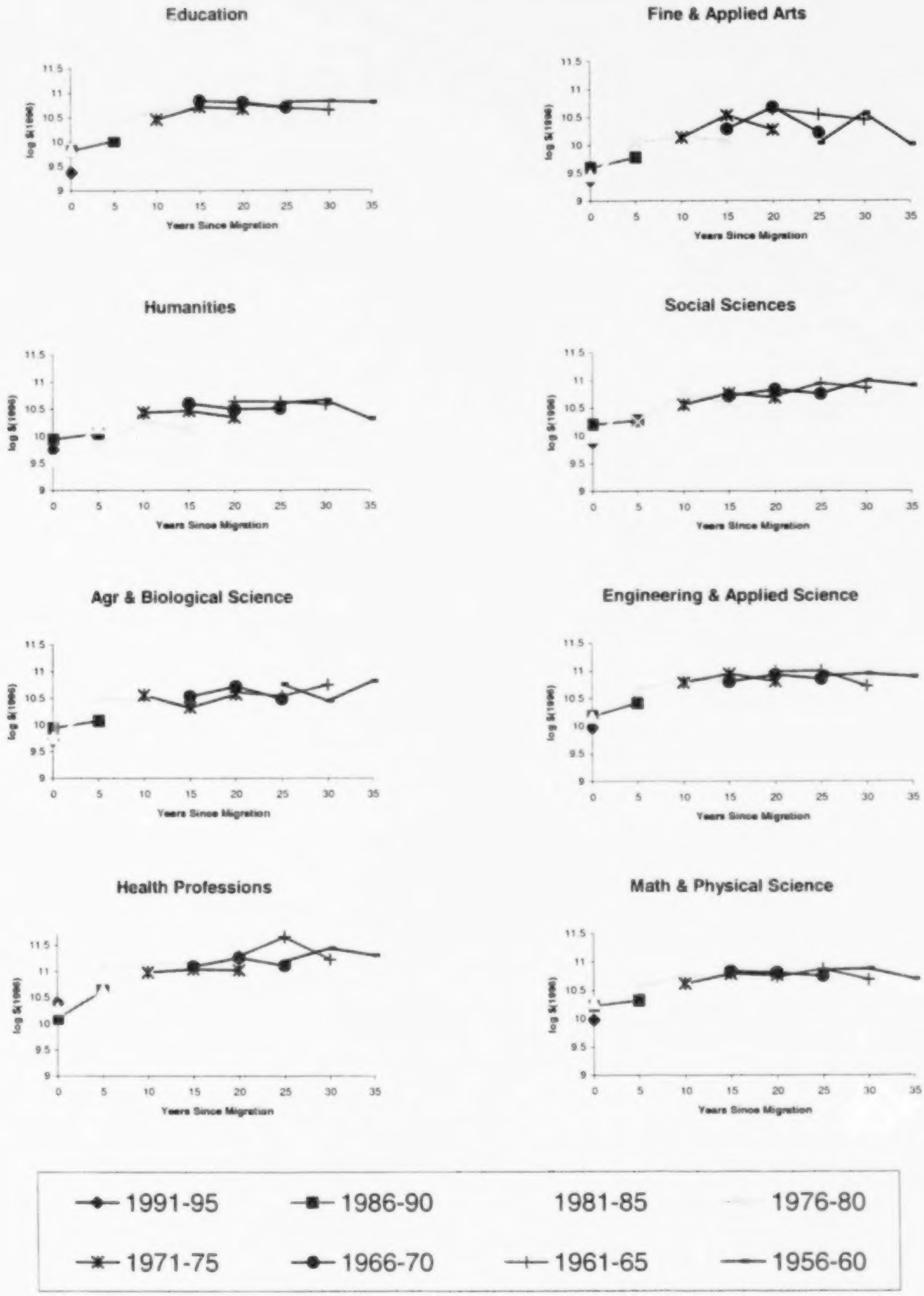
Note: Each line segment follows a 5 year immigrant entry cohort over time using the 1986, 1991 and 1996 censuses. Data points are predictions from regressions that control for the variables described in the text, including cohort effects that are common across fields.

Figure 5 - Females with a Foreign Master's Degree



Note: Each line segment follows a 5 year immigrant entry cohort over time using the 1986, 1991 and 1996 censuses. Data points are predictions from regressions that control for the variables described in the text, including cohort effects that are common across fields.

**Figure 6 - Males with a Foreign Master's Degree**



Note: Each line segment follows a 5 year immigrant entry cohort over time using the 1986, 1991 and 1996 censuses. Data points are predictions from regressions that control for the variables described in the text, including cohort effects that are common across fields.

## *VI. Oaxaca-Blinder Decompositions*

While it is useful to look at the variation across fields, it is also useful to formalize the impact of the different returns to, and the distribution of, field of study on the immigrant-Canadian-born earnings gap. This is done in a series of Oaxaca-Blinder decompositions. This approach can only compare across two groups, and it can only deal with variables that are common to the immigrants and Canadian-born. Hence, it does not look at the determinants of the distribution of earnings within the immigrant sample (e.g., it does not look at source region). Each variable in the regressions is allowed to have immigrant and Canadian-born coefficients, and earnings differences are attributed either to differences in the distribution of the underlying characteristics, or differences in the return to (i.e., the coefficient for) each characteristic, which reflect how the same characteristic (as measured by the census) is valued in the labour market on average for each group.

$$\begin{aligned} \ln(earnings) &= X_{CB}\beta_{CB} + \varepsilon_{CB} \\ &and \\ \ln(earnings) &= X_{imm}\beta_{imm} + \varepsilon_{imm} \end{aligned} \qquad (3)$$

Where "CB" indicates "Canadian Born", "imm" immigrant (either Canadian, or foreign, educated since each is compared to the Canadian-born in turn), X is the data, a vector of coefficients, and an error term. The first regression is estimated using only the Canadian-born data, and the second only the immigrant data for whichever group is of interest. Predictions are then made for each regression at its own mean values of the X's, and at the other groups' mean values. Differences between various sets of these predictions are the focus of attention. In particular, one can ask questions such as: What would average immigrant wages be if they had the Canadian-born's set of fields of study (endowments) but their own returns (coefficients)? What if they had their own field endowments, but the Canadian-born coefficients? These type of counterfactuals are the subject of tables 13 and 14. In these tables three sets of numbers are presented for each set of variables of interest. For each, a positive value indicates that the Canadian-born have an earnings advantage (a positive gap) relative to the relevant immigrant group (either Canadian or foreign educated), whereas a negative number implies the reverse. All such earnings gap estimates are in percentages, and are from regressions that control for the observable characteristics. The first number is the difference in earnings attributable to the set of variables indicated. For example, in table 13, the age coefficients for foreign-educated females with a college certificate (upper left-hand corner of the table) are associated with 32.7% larger earnings for the immigrant group relative to the Canadian-born (i.e., the negative sign implies the immigrant group has an earnings premium). The second number, -1.5, suggests that differences in the age variable itself plays only a small part in generating this difference. Most of the earnings gap comes from differences in the return to age, with all female subgroups of immigrants having much higher returns, that is, for female immigrants earnings increase with age much more quickly than they do for the Canadian-born. This likely results from age reflecting both the earnings effects of increasing age (and relatedly potential labour market experience) and years since migration. Recall that the regressions underlying these decompositions cannot contain variables such as years since migration variables since they are not available for the Canadian-born. Thus this makes sense since we are not controlling for the immigrant integration effect, and integration is correlated with age – immigrants appear to have a much steeper age-earnings profile because, in this context, age is measuring both its own effect and that associated with economic integration.

Table 13 examines female earnings in 1996, and has eight columns. The first four present results for the foreign-educated immigrants, and the next for the Canadian-educated ones. Results are presented for six sets, or groups, of coefficients. The way that these are set up, a positive number indicates the percentage earnings advantage for the Canadian-born, while a negative number indicates the advantage for the immigrant group in question. For the first column, immigrants are seen to have an advantage in every category except visible minority status. The effect for the language coefficients is worth discussing. Across all of the regressions in table 13, the effects are large and negative. That in column (1) implies a 50% earnings advantage for foreign educated immigrants – recalling the descriptive statistics in tables 1 and 2, college graduate immigrant women are more likely to speak neither official language, and less likely to speak French. Also, their return to speaking English, or both official languages, is very substantial, and the return to speaking French is modest for both groups. The overall effect of the endowments is close to zero, but the remarkable earnings advantage obtained by those who speak English or are bilingual provides them with an overall earnings advantage in terms of language. Therefore, it appears that, holding the other characteristics constant, those females who report speaking neither English nor French have earnings comparable to similar Canadian-born workers, but those who do speak one or both of the official languages have a substantial earnings premium. Although the magnitude varies, this effect is obvious for all the columns in the table, except the Canadian educated PhDs. Of course, these are correlations, not causal impacts.

TABLE 13

OAXACA - 1996 FEMALES

| | Foreign Educated Immigrants | | | | Canadian Educated Immigrants | | | |
|---|---|---|---|---|---|---|---|---|
| | College | Bachelor | Master's | Ph.D. | College | Bachelor | Master's | Ph.D. |
| AGE | -32.7 | -17.7 | -22.3 | -129.3 | -17.8 | -9.1 | -21.8 | -44.4 |
| Endowments | -1.5 | -6.9 | -3.8 | -2.1 | -0.4 | -0.5 | -2.3 | -1.6 |
| Coefficients | -31.2 | -10.8 | -18.7 | -127.1 | -17.4 | -8.6 | -19.6 | -42.6 |
| PROVINCE | -4.5 | -0.9 | 0.3 | 14.5 | -1.8 | 2 | 1.9 | 17.6 |
| Endowments | -2.7 | -1.9 | -0.4 | -1.2 | -3.1 | -2.5 | -0.2 | -1.9 |
| Coefficients | -1.9 | 1 | 0.6 | 15.9 | 1.3 | 4.4 | 2.1 | 19.7 |
| CMAs | -5.5 | -13.3 | -7.5 | -11.1 | -8.5 | -7.2 | 10.8 | 6.4 |
| Endowments | -11.4 | -7.3 | -3.9 | 0.5 | -8.7 | -5.9 | -3.6 | 1.9 |
| Coefficients | 5.9 | -6 | -3.6 | -11.6 | 0.2 | -1.3 | 14.4 | 4.5 |
| FIELD | -2.3 | -9.3 | -4.7 | 18.3 | -2 | -1.5 | 0 | 7.3 |
| Endowments | -0.3 | -3 | -0.8 | -0.9 | 0.6 | -0.9 | -0.3 | 1.2 |
| Coefficients | -2 | -6.3 | -3.9 | 19.2 | -2.6 | -0.6 | 0.3 | 6.1 |
| VISMIN | 0.8 | 7.8 | 3.3 | 7.1 | 1.1 | 3.6 | 3.5 | 2.6 |
| Endowments | 1.1 | -0.9 | 0.7 | 1.1 | 0.7 | -0.5 | 0.5 | 0.7 |
| Coefficients | -0.3 | 8.7 | 2.6 | 6 | 0.4 | 4.1 | 3 | 1.9 |
| LANGUAGE | -50.3 | -67.2 | -53.2 | -116.1 | -153.4 | -53 | -155.9 | 4 |
| Endowments | 0.4 | 4.8 | -0.9 | 4.4 | 0.1 | 1.3 | -0.2 | 1.9 |
| Coefficients | -50.7 | -72 | -52.3 | -120.5 | -153.5 | -54.3 | -155.7 | 2.1 |
| TOTAL | 7.2 | 35.9 | 46 | 24.6 | -5.3 | 1.2 | 5.7 | -1 |
| Endowments | -14.4 | -19.6 | -8.5 | -2.4 | -10.7 | -10.1 | -6.2 | 0.8 |
| Coefficients | -80.3 | -108.4 | -97.3 | -296.7 | -171.6 | -83.2 | -248.9 | -19 |
| Shift Paramtr. | 101.9 | 163.9 | 151.7 | 323.8 | 177 | 94.5 | 260.8 | 17.2 |

Source: 1996 Canadian Census

Notes: Positive values denote Canadian born earnings advantages (%); negative values denote immigrant earnings advantages (%).

Despite having an earnings advantage in almost every category, we saw earlier in the descriptive statistics that the foreign educated immigrant group on average earns less, not more, than their Canadian-born counterparts. For reasons that are not related to the observed factors in these regressions, the immigrants have a very large earnings disadvantage, as reflected in the shift, or intercept, term. Since only common factors are included in the decompositions, the shift parameter includes the average effects of age at immigration, place of origin, economic integration and other unobserved factors. Thus, overall, the college graduate foreign educated female immigrants in column (1) earn 7.2% less (or the Canadian-born earn 7.2% more); the immigrants have an advantage on the observable characteristics, but start from a much lower base. Most of the other educational categories in this table have a broadly similar result: the Canadian-born have a large earnings advantage for unobserved reasons that might include factors such as the quality of language knowledge, Canada-specific skills, lack of credential recognition, discrimination or other issues.

Focussing on field of study, in table 13 for females and table 14 for males, differences in the current distributions of field are not seen to have consistently large impacts on earnings differences between the Canadian-born and the various immigrant groups (as opposed to across fields within groups where large differences were seen earlier). For females the magnitude of the impact of field of study is not large compared to that of other variables, while for men it is of a comparable influence to the other sets of characteristics under study. Nevertheless, in most columns the immigrants have a small earnings advantage because of their being somewhat more likely to be in higher valued fields of study. Although, as seen earlier, there is great heterogeneity among fields of study, it appears that the differences between the Canadian-born and each immigrant group never explain more than a 14% earnings difference, and for some groups close to none of the difference is explained. In all cases for the males, and most of those for the females, the field endowments have a negative sign suggesting that the various immigrant groups have, compared to the Canadian-born, a distribution of fields that is associated with higher earnings. However, the magnitude of the effect is always small, never more than 5.6%. The coefficients (the relative economic return to fields) provide more mixed results, sometimes being associated with relatively higher earnings for immigrants, but frequently the reverse is true (especially for the males). Thus, if immigrants had the same distribution of fields of study as the Canadian-born, most subgroups would suffer an earnings loss relative to the Canadian-born. This is consistent with the results observed in the regressions and the tables showing the distribution of immigrants across fields. Of course, policy could be used to change the distribution of field of study among immigrants and increase the fraction in high paying fields. Note, that this analysis measures the importance of the current distribution of field of study in explaining existing differences in earnings; it says nothing about what might occur if field of study were added to the points system.

TABLE 14

OAXACA -1996 MALES

| | Foreign Educated Immigrants | | | | Canadian Educated Immigrants | | | |
|---|---|---|---|---|---|---|---|---|
| | College | Bachelor | Master's | Ph.D. | College | Bachelor | Master's | Ph.D. |
| AGE | -11.6 | -6.6 | 17.4 | -45.1 | -0.7 | -3.8 | 0.9 | 51.2 |
| Endowments | -3.9 | -8 | -1.2 | -1.5 | -0.4 | -0.7 | -1 | -3.8 |
| Coefficients | -7.7 | 1.4 | 18.5 | -43.7 | -0.3 | -3.1 | 2 | 55 |
| PROVINCE | 0.2 | 5.3 | -0.1 | 0.9 | -6.4 | -3.8 | 6 | 9.8 |
| Endowments | -3.5 | -3.3 | -1.4 | 1.4 | -3.7 | -3.1 | -1.4 | 0.4 |
| Coefficients | 3.4 | 8.5 | 1.2 | -0.5 | -2.7 | -0.8 | 7.5 | 9.2 |
| CMAs | 8 | 14.4 | 9.7 | 7.4 | 0 | -3.4 | 0 | 3.3 |
| Endowments | -5 | -4.1 | -3.6 | -2.7 | -3.9 | -3 | -2.2 | -1.6 |
| Coefficients | 13 | 18.5 | 13.3 | 10.1 | 3.9 | -0.4 | 2.2 | 4.9 |
| FIELD | 0 | 7 | -13.7 | -17.4 | 1.8 | 3.7 | 9.3 | -0.4 |
| Endowments | -0.6 | -5.6 | -5.2 | -3.7 | -0.4 | -2.7 | -3.2 | -1.6 |
| Coefficients | 0.6 | 12.6 | -8.5 | -13.7 | 2.2 | 6.4 | 12.5 | 1.2 |
| VISMIN | 12.8 | 23.5 | 12.2 | 10.4 | 6.1 | 7.8 | 4.7 | 3 |
| Endowments | 3.9 | 9.7 | 7.8 | 10.4 | 2.4 | 5.4 | 4.7 | 6.6 |
| Coefficients | 8.9 | 13.8 | 4.4 | 0 | 3.7 | 2.4 | 0 | -3.6 |
| LANGUAGE | -2.5 | -3.6 | -27.8 | -23.7 | 3.3 | -2.4 | 19.4 | 7.3 |
| Endowments | 0.6 | 4.5 | 0.7 | 10.9 | -0.1 | 2.7 | 1.2 | 6.8 |
| Coefficients | -3.1 | -8.1 | -28.5 | -34.6 | 3.4 | -5.1 | 18.2 | 0.5 |
| TOTAL | 15.4 | 38.1 | 38.2 | 16.5 | -3.7 | 5.7 | 2.5 | -4.8 |
| Endowments | -8.5 | -11.1 | -3.6 | 4.4 | 0.4 | -4.2 | -3.4 | 0.2 |
| Coefficients | 15.1 | 28.7 | -14.8 | -97.6 | -6.1 | -4.6 | 50.8 | 73 |
| Shift Paramtr. | 8.8 | 20.5 | 56.6 | 109.7 | 10.2 | 14.5 | -44.9 | -78 |

Source: 1996 Canadian Census

Notes: Positive values denote Canadian born earnings advantages (%); negative values denote immigrant earnings advantages (%).

The pattern of decompositions across census years was conducted for the 1986 and 1991 censuses, but is not presented since it is broadly similar though the shift parameter is not as empirically important in 1991 for the females and the PhD column varies for both sexes (as seen in tables 1 and 2, the PhD sample size is the smallest of the education groups and, therefore, the results for that level should be viewed as having less precision). As has been seen in much previous research (e.g., Schaafsma and Sweetman, 2001), the 1996 census reported worse outcomes for recent immigrants than had earlier censuses. These tables suggest that the origin of this phenomenon rests not in any of the observed characteristics that are common to immigrants and the Canadian-born, including field of study. It is plausible that the business cycle played an important role, but there is no evidence other than the dating of the censuses to substantiate this hypothesis in the data employed in this study.

## VII. Conclusion

Overall, the analysis finds that postsecondary field of study is an important determinant of earnings for both the Canadian-born and immigrant populations. However, while immigrants are more likely to be in a higher paying field, the difference is relatively small. Although we only present results from the 1996 census, a similar analysis was conducted for the 1986 and 1991 censuses, and the pattern of results was consistent.

Turning to the details of the analysis, first, to facilitate the analysis conceptually, the working age population under study was initially divided into 18 sub-populations identified by: sex (female and male), immigrant classification (those born in Canada, Canadian educated immigrants, and foreign educated), and highest postsecondary degree (college, bachelor's and master's). Since there are 54 fields of study, although not all apply to each level of education, these subpopulations reduce the parsimony of the study, but are required to facilitate a meaningful analysis of a heterogeneous issue. Further, to provide the context for the exploration of postsecondary field of study, initial descriptive statistics looking across levels of education are provided for each of the six sex-immigrant/Canadian-born groups. The most striking general observation across all levels of education is that, for both sexes, Canadian educated immigrants have extremely good labour market outcomes, in terms of earnings, hours per week and weeks per year. They are better than those for the Canadian born, and far better than those for foreign educated immigrants. In part, this is because they have high levels of education. In contrast, immigrants without Canadian education have fewer years of education, are less likely to have had work in the year and have lower earnings.

There are also very sizable differences in demographic characteristics across the six sex-immigrant/Canadian-born groups. For both sexes, the foreign educated are the oldest of the groups, and they are almost alone in having a sizable fraction of individuals who speak neither of Canada's official languages. A high fraction of those who speak neither language have less than a high school education. On other dimensions, both immigrant groups (Canadian and foreign educated) are dramatically more likely to be a visible minority and live in an urban area.

Initial descriptive statistics by field of study for the three selected levels of education show all three groups to have quite different distributions across fields of study. Especially for females, but also for males, the Canadian-born group is much more likely, two to three times, to have a teaching degree. Immigrants, especially immigrant females compared to Canadian-born females, are much more likely to be in engineering and applied sciences, or in math, physical sciences and medicine. In general, female immigrants are more likely to enter "traditionally male", and higher paying, disciplines that are science or math related than are Canadian-born females (for example, economics comprises 1.34% of female Canadian-born bachelor's degrees, but 3.86 and 3.24 of the foreign and Canadian educated immigrant ones).

Simple descriptive statistics of mean salaries by group and field show many differences across fields within levels of education that are on the order of 30 to 50% for the Canadian born. For example, in 1996 Canadian-born male graduates with a bachelor's degree in English received, on average, $35,389 per year, whereas mechanical engineers received $55,987. Females, on average, had lower earnings, but the gaps across fields were similar: fine art graduates earned $21,335, whereas those in mathematics received $35,259 (mechanical engineering was $42,168). Canadian educated immigrants have comparable, or higher, earnings to the Canadian born, but the foreign educated immigrants have lower ones. Further, the field of study differentials within the foreign educated subgroup are not as large.

At the bachelor's level the statistical regressions reinforce the observation that the differences between fields is not as large for immigrants, especially for the foreign educated, as it is for the Canadian born. This is not to say that no field differences exist, or that the pattern is perfectly "smooth", but that there is a general tendency for fields with positive premia for the Canadian born to have a reduction in that premium observed for the immigrant subsample (though the premia remain substantial).

For college graduates there are far fewer differences in field of study premia between the Canadian-born and immigrant populations. The premia by field are, however, broadly similar with the more science and technology oriented fields having greater earnings along with those in business, law and related fields. At the master's level the pattern is quite different. Field of study premia are still observed, but foreign educated immigrants with a master's degree generally have positive premia relative to the Canadian born, especially in the lower paying arts, and literature and humanities, fields. This, once again, serves to reduce the differential between the high and low paying fields for the immigrant population relative to the Canadian-born one.

Predictions based on the regressions above reinforce the earnings differences observed previously across both levels of education and fields of study in terms that are readily interpretable. On average, those with higher levels of education, and in fields in sciences (though not agricultural and biological sciences) and many of the non-traditional social sciences (e.g., business), tend to have higher earnings. These two factors trade off against each other and, on average, those with college level degrees in physical sciences and trades have earnings that are comparable, and for the males frequently higher, than those with bachelor's degrees in fine and applied arts, and humanities. In comparing both immigrant groups to the Canadian born, it is important to recall that the predictions are for the average source region and birth cohort, and for those who arrive between the ages of 15 and 20. For most fields immigrants are observed to have earnings that are below those of Canadian-born individuals in the same field and the gaps are sometimes substantive. For example, Canadian-born females with a bachelor's degree in psychology earn $31,229, on average, compared to $25,256 for foreign educated immigrants, and $24,838 for those with at least some education in Canada. For high paying fields the dollar gaps can be much larger. Many of these gaps across the Canadian-born and immigrants groups are accentuated in the predictions relative to the descriptive statistics. This arises from differences in the samples and the procedure employed; the counterfactual sets characteristics to be the same across the three groups (except for those defining the cell for the prediction, and the immigrant specific variables). However, immigrants tend to have characteristics that are associated with higher earnings (e.g., they tend to be more urbanized), and when the effect of these characteristics is removed, the earnings gap between immigrants and the Canadian born increases.

Economic integration profiles for the foreign educated are also presented. They graphically show differences in both levels and integration patterns across fields and levels of education. Increased earnings with years since migration are observed for all fields at the bachelor's level, except perhaps fine and applied arts where there is little earnings progression with time in Canada. At the college level there is much less earnings progression as years since migration increase. This is in accord with age-earnings profiles in the literature, which show much smaller earnings increases with age for those with lower levels of education (a textbook treatment is Benjamin, Gunderson and Riddell, 1998, figure 9.5). It suggests that Canadian human capital accumulation is more prevalent for those with higher levels of education. Though this is not unique to immigrants, increased education is associated with increased learning post-graduation. The integration profiles for those with master's degrees are at least as steep as those with a bachelor's degree. However, the sample sizes are smaller and some of the plots are quite noisy, especially for the females.

A set of (Oaxaca-Blinder type) decompositions are used to compare each immigrant group to its Canadian-born counterpart within each degree level. This analysis allows any differences between the Canadian born and each immigrant group to be decomposed into differences in endowments, and the return on those endowments. Field of study is treated as one type of endowment. It is found to explain at most about 14% of the difference in earnings between the two groups. Age, associated with in the range of a 20 to 30% premium for the various immigrant female groups, though somewhat less for the males, and language, associated with an over 50% premium for the females, but again less for the males, appear to be much more important characteristics economically for the females and equally important for the males in explaining earnings differences. Thus field of study is a relatively more important predictor of earnings differences with the Canadian born for males than females. However, for the females none of the observed characteristics explain as much as is left unexplained. That is, there is much that is attributable to factors, such as time since migration, that are unique to immigrants, and/or to factors that are not included in the regressions. For males, the observed characteristics explain a much higher fraction of the variance in earnings, but there is still much that remains unexplained. Immigrants almost always have economic advantages in terms of their characteristics, and they frequently have returns to those characteristics that are greater than those of the Canadian born, but they almost always have an even larger deficit in terms of characteristics that are associated with their immigrant status (such as time in Canada).

Overall, there are sizeable earnings differences across fields of study, and these differences are observed for both immigrant groups and the Canadian born. However, the magnitude of the differences are, in general, slightly smaller for the immigrant groups, especially the foreign educated, compared to the Canadian born. Still, British Columbia's approach to finding high earning immigrants, described in the introduction, selects individuals who tend to have higher than average earnings.

This study does not look at the impact that this type of focussed immigration policy, were it expanded in scale, might have on those already working in the Canadian labour market (both Canadian born and previous entry cohorts of immigrants). This is an area that should be explored in future research should the policy of targeting immigrants by field of study be pursued, especially if the fraction of immigrants in such fields grows substantially. Relatedly, it would be worth considering the social impacts of an immigrant pool comprised largely of individuals from a narrow set of fields of study.

If field of study were to be used in the points system, it would also be advantageous to collect data on field of study at landing – that is, the field that would be employed by the points system. For the foreign educated, the field observed in the census is that at landing, but this need not be the case for those with Canadian education since the field of their highest level of postsecondary may have changed, or been established for the first time, following their arrival in Canada. While some of the Canadian educated arrived in Canada at a sufficiently young age that they would not have entered postsecondary before landing, there is a substantial group of the Canadian educated for whom the field recorded in the census may not reflect the one that would have been observed at landing. In a similar vein, for policy purposes with respect to the points system, field of study is only relevant for those who are assessed under that system. The census data employed in this study do not allow immigrant class to be observed; collecting information that allowed field to be identified along with immigrant category would be valuable.

Beyond the points system this study gives insight into the economic integration and labour market performance of immigrants to Canada. It suggests that the economic premia associated with field is quite important, but it appears not to be as important for immigrants as for the Canadian born since the differences between the high and low earnings fields of study are usually smaller for the immigrant groups. It also shows that there is great economic value in Canadian education.

## *Appendix 1 - Unemployment Insurance and Other Government Transfer Receipt by Field of Study*

### *Descriptive Statistics*

This appendix looks at Unemployment Insurance and other government transfer receipt by immigrants according to their field of study.[12] It follows a format and methodology identical to that used for earnings in the main text. Appendix table 1 complements tables 1 and 2 in the text and describes labour supply (weeks and hours) and program benefit by level of education. The groups are exactly the same and the sample sizes are given in tables 1 and 2 for the entire population (i.e., it is not restricted to the working subsample). Similar to the pattern seen in tables 1 and 2, for both sexes the Canadian educated immigrants work both more weeks in the year, and hours in the week, than the other two groups of the same sex. The Canadian born provide the second largest quantity of labour in the market, and the foreign educated the least. This pattern is observed across essentially all levels of education. Both Unemployment Insurance and other government transfers reflect the total dollar value received in the year 1995.

Unemployment Insurance receipt has somewhat different patterns across the two sexes, which follows from both employment patterns and employment earnings that influence the benefit rate. For both, the Canadian born obtain higher benefits, but for females the Canadian educated immigrants receive the second largest amount, whereas for the males the foreign educated do. Canadian-educated females have higher earnings, which causes higher benefit receipt when unemployed, and possibly they are more likely to take advantage, and to be in a position to take advantage because of their greater labour force attachment, of maternity and parental benefits. That the Canadian born receive the most Unemployment Insurance benefits is not surprising given the relative geographic distribution of Canadian born away from major centres with lower unemployment rates.[13] Further, for Unemployment Insurance benefits, the Canadian born receive more in almost every education category.

In terms of other government transfers, differences from the Unemployment Insurance pattern are obvious and include the foreign educated immigrant males receiving more government transfers at almost all levels of education, whereas the Canadian-educated immigrant males receive less at almost every level, compared to the Canadian born. In contrast, among females the Canadian born receive greater transfers. That foreign educated females are observed to, in total, receive less government transfers is not entirely attributable to their being the best educated group since it occurs within education categories. The Canadian educated immigrants have a pattern that, while there are some differences, largely mirrors the Canadian-born female pattern. Of course, it is more difficult to separate government transfers by sex than it is for Unemployment Insurance receipt since the former are to families, and depend upon family size, while the latter are to individuals. It is not clear which family member will report the receipt on the census form.

---

[12] We use the term Unemployment Insurance, rather than Employment Insurance, since the data in question refers to 1995, when the Unemployment Insurance system was operating. Other government transfers (that is, aside from Unemployment insurance) include old age security pensions, which are not particularly relevant to the age groups under study, provincial income supplements, social assistance, and welfare payments. Previous work in this area includes, Baker and Benjamin (1995), Crossley, McDonald and Worswick (2001), and Sweetman (2001). All find that immigrants make less use of Unemployment Insurance than the Canadian born, although there is mixed evidence on trends in use with years since migration. Social assistance is only addressed in the first, where its receipt is seen to be lower, on average, for immigrants.

[13] As seen in tables 1 and 2 in the main body of the paper, immigrants are much more likely to live in an urban environment, and, related though not explicitly displayed in the tables, they are much less likely to live in the east coast provinces and northern regions of Canada that have quite high unemployment rates.

### *Unemployment Insurance receipt by those with Bachelor's Degrees*

Appendix table 2 is comparable to table 7 but the dependent variable is Unemployment Insurance benefits rather than earnings. It presents coefficients for interesting background variables for those with a bachelor's degree. The set of control variables in each regression is exactly the same as for earnings. Also, as with the earnings tables, coefficients from some control variables are not reported to save space. One important difference from the earnings regressions is the nature of the sample. These regressions contain the entire sample of immigrants (comparable to the relevant samples in tables 1 and 2, and appendix table 1, but with slightly fewer observations since some had missing information). Those who had no Unemployment Insurance benefits, or government transfers (to be discussed below), in the year have those variables set to $1 and the natural logarithm of each variable is used in the regression. (Note that the logarithm of one is zero.) Unlike earnings, including those without benefit receipt is conceptually important for understanding the use of these. Of course, though not displayed, these regressions control for place of residence, which is empirically important for Unemployment Insurance with Québec and the eastern Canadian provinces receiving greater benefits. Including these controls provides a measure of Unemployment Insurance receipt relative to those in the same local labour market, in contrast to the descriptive statistics. With these controls the immigrant indicator is effectively zero for all but the foreign-educated immigrant males, for whom it is strongly positive with a coefficient of 0.981. Interestingly, Canadian-born visible minority females receive less Unemployment Insurance, but males receive about the same amount conditional on the other regressors employed. With the exception of the foreign educated females, the other immigrant visible minority coefficients do not differ from zero. That for the foreign educated females serves to counterbalance the coefficient for the Canadian born; so the total effect is zero for that group. Canadian-born individuals of both sexes with knowledge of English, or neither official language, appear to receive less Unemployment Insurance, but the deviations from this pattern are quite mixed for the immigrant groups.

Arrival cohort only appears to be associated with Unemployment Insurance benefits for the Canadian educated males, and foreign educated females, for whom more recent cohorts receive less. Although the reasons for this are unclear, it is consistent with Crossley, MacDonald and Worswick (2001), who find mixed results in a longitudinal context across immigration cohorts. Of course, they have not controlled for age at immigration and cohort effects simultaneously. Age at immigration is, in contrast, correlated with benefit receipt, with those who immigrate at a younger age taking up fewer benefits for the Canadian educated (as with the earnings section, the omitted group for the foreign educated is those who immigrate between the ages of 16 and 20). For the foreign educated, the pattern differs across the sexes, with the omitted group receiving the most benefits among the males, but the fewest among the females. Some of the differences with respect to age at immigration are quite large. Region of origin has some sizeable implications for Unemployment Insurance benefits, but many of the coefficients are close to zero.

Turning to appendix table 3, which contains the regressions results for fields of study for those with a bachelor's degree, there are clear differences across fields of study. For the Canadian- born females, graduates from no field of study receive more Unemployment Insurance benefits than those with an education degree (i.e., all of the coefficients are negative, though a few are not statistically significant). Further, many of the differences across fields are over 50%. For males, the contrast is not quite as stark. Graduates in arts, and literature and humanities, have comparable and sometimes greater Unemployment Insurance receipt. However, those in the high earnings disciplines, such as business, law, engineering, health and natural sciences all received lower, and frequently much lower (up to 50 or 60% less), Unemployment Insurance benefits in 1995. The differences are quite striking.

For the immigrant groups, the coefficients, which represent differences in Unemployment Insurance use relative to the Canadian born, tend to be positive when they differ from zero, especially among the high earnings disciplines. Thus the gap between those with an education degree, usually the highest Unemployment Insurance benefit receiving discipline, and the other fields is smaller. The fields in arts, literature and the humanities, the traditional social sciences and agriculture and the biological sciences tend to be slightly more similar to each other and to education for the two immigrant populations. Overall though, these differences are not large enough to reverse the pattern observable among the Canadian born, although they do for some particular fields. As with earnings, the differences across fields are not as strong for the immigrant groups as for the Canadian born.

### *Unemployment Insurance receipt by those with College Certificates and Master's Degrees*

Appendix table 4 explores Unemployment Insurance receipt among those with a college certificate. Though perhaps not as strong, the pattern for the Canadian born is remarkably similar to that for bachelor's degrees with the omitted group, education, receiving more Unemployment Insurance benefits than other disciplines, but in this case the observation applies to both sexes equally. Many of the differences are quite substantial, over 50% greater benefit receipt in the year. The pattern of differences of each immigrant group from the Canadian born is similar to that for bachelor's degrees, but not as strong. Most disciplines have positive coefficients.

Appendix table 5 looks at Master's degree holders. The pattern seen for bachelor's degrees does not appear to hold here. In particular, those with education degrees are no longer the most prevalent users of Unemployment Insurance. Comparable benefit receipt is made by those in arts, literature and humanities, and the traditional social sciences. Overall, Unemployment Insurance benefit receipt appears to be much more evenly distributed across fields at the master's level, except that social sciences such as business, law and related, and engineering for the males, receive less. One notable aspect of this table, akin to that observed for earnings at the master's level but in reverse, is that the foreign educated receive fewer benefits outside of education.

### *Government Transfers received by those with Bachelor's Degrees*

Other government transfers are also observed to vary across fields of study. For those with a bachelor's degree, the coefficients on the non-field of study (background) variables of interest are presented in appendix table 6. Interestingly, the immigrant indicator variables are close to zero for both education groups for both sexes. (Of course, as everywhere else, the immigrant indicator reflects a particular set of immigrants, those in the omitted groups for the other indicator variables.) Canadian-born male visible minorities are seen to receive up to ((exp(0.593)-1)*100%=) 80.9% more government transfers than non-visible minorities. Female visible minority immigrants do not differ from the Canadian born, but the males do. Canadian educated males receive less, and the foreign educated receive more. Language knowledge is, once again, mixed, but those who speak French tend to receive greater transfers. More recent arrival cohorts also appear to make greater use of benefits for males, but not for females. This may reflect who reports the benefit receipt in households with males and females. Among source countries, males from regions other than the omitted one (UK, US, Australia, New Zealand etc.) tend to receive greater transfers, but the reverse is true for females.

Looking at appendix table 7, a pattern of coefficients that is numerically the inverse of that for earnings is observed. For the Canadian born, individuals in the lower earning fields in arts, literature and humanities, the traditional social sciences and some agricultural and biological sciences tend to receive more government transfers than those in business and law, engineering, health and natural sciences. This pattern is the same for both sexes, and the differences are quite large. Canadian-born females with a philosophy degree, for example, receive ((exp(0.718)-1)*100%=)105% more than those with an education degree, while those with a mathematics degree receive ((exp(-0.333)-1)*100%=) 39.5% less.

Canadian educated immigrants have a pattern that is very similar to the Canadian born; only a very few coefficients are statistically significant. The foreign educated have a pattern that has been seen in the previous tables. Their pattern exhibits a smaller range of differences across fields than the Canadian born and the coefficients tend to have opposite signs from those of the Canadian born. The differences are not enough to "undo" the pattern whereby those in sciences, business and law tend to receive fewer transfers on average, but the difference across fields is not as large.

### *Government Transfers received by those with College Certificates and Master's Degrees*

The pattern of government benefit receipt for college graduates is quite similar to that for individuals with a bachelor's degree, and, like those with a bachelor's degree, close to a mirror image of the pattern for earnings. For the Canadian born, those in arts, humanities and the traditional social sciences tend to receive greater transfers, whereas those in the sciences (except agriculture and biological sciences) receive fewer. One exception is that females in trades and technology fields, in stark contrast to the males, tend to receive higher transfers. The Canadian educated immigrant population is quite similar to the Canadian born one, though once again, what differences there are tend to moderate the aforementioned pattern. Unlike the bachelor's level for transfers, but more like the college findings for earnings, the foreign-educated immigrant population is also very similar to the Canadian born one, and again what deviations there are tend to moderate the differences across fields.

At the master's level, as seen in appendix table 9, the pattern for the Canadian born is remarkably similar, in broad terms, to that for the bachelor's level. One exception is the males in the natural sciences, where, as with earnings, their outcomes are more similar to the omitted group (education) than is the case at the bachelor's level. The Canadian educated immigrants are again quite similar to the Canadian born; that is, there are few statistically significant coefficients, but again those that are significant tend to have the opposite sign from the Canadian born. In contrast, the foreign educated tend to have negative coefficients, suggesting that many fields receive fewer government transfers than those in education.

### *Predicted Unemployment Insurance and Other Government Transfers*

Appendix tables 10 through 13 present predictions from the regressions in appendix tables 2 though 9. These are valuable since they permit comparisons across regressions that are not easy to do with the regression output, and they combine the effects of the fields of study with those of the other variables. However, as with the predictions in the main paper, the other variables are held at the same values for all cells in the tables (age 40, all others at the sample mean except age at immigration, which is at the common omitted group).

For both sexes, in appendix tables 10 and 11, Unemployment Insurance receipt is seen to average between just under $200 per year, to somewhat over $1000 (with a few exceptions going higher, but recall that these are estimates and some of the underlying coefficients are large, but not statistically significant). Many of the patterns are as discussed for the coefficients. Most notable is that, as was the case with the coefficients, there are fewer differences across fields for Unemployment Insurance than either earnings or government transfers. This is probably largely because of the maximum insurable earnings provision, that reduces the relationship between earnings and benefits, and the fact that labour force attachment is required to qualify for benefits.

More substantial differences, and clearer patterns are observable for government transfers other than Unemployment Insurance. The high paying fields receive fewer transfers, as do those with a college degree. Among those with a bachelor's degree, in general the Canadian born in literature and the humanities, fine arts, and the lower paying social sciences, receive greater benefits. Immigrant females tend to report relatively low levels of government transfers, whereas the comparable males have quite large transfers. Since a substantial portion of the transfers in this group, especially social assistance, is (unlike Unemployment Insurance and earnings) transferred to the household rather than individuals, this may reflect reporting patterns in part.

### *Appendix Conclusion*

In looking at annual Unemployment Insurance (Unemployment Insurance since the data is from 1995) and other government transfer (e.g., social assistance) receipt, both immigrant groups are observed to receive less Unemployment Insurance than the Canadian born. And only foreign educated immigrant males receive more government transfers than their counterpart Canadian-born group. In terms of patterns across fields of study, for the most part the results are mirror images of those for earnings, although the findings for Unemployment Insurance are more mixed. One exception to this is that those, especially the Canadian born, with education degrees tend to receive very large Unemployment Insurance transfers. Overall, those fields with high earnings also have lower, or much lower, levels of benefit receipt from other government transfers.

Interestingly, the pattern seen for earnings whereby the variation across fields is larger for the Canadian born than for either immigrant group, is seen for these benefits. While differences across fields are present for all groups, they are generally larger for the Canadian born (though the study does document a few exceptions, for example females with college certificates in trades and technology).

As with the earnings analysis, while the census has the advantage of a large sample size that permits detailed fields to be observed, there would be value in exploring the field of study issue in data that capture field at landing rather than at the survey date. Perhaps the longitudinal immigrant survey that is in the field currently could be used to explore this question. Relatedly, the census only captures the highest field of study, and for those with some Canadian education, this may differ from that at landing. For policy purposes, an improved understanding of how the relationship between the various aspects of education, including field of study, interact with the economic and social integration immigrants to Canada would be worthwhile.

Appendix Table 1 - DESCRIPTIVE STATISTICS for UNEMPLOMENT INSURANCE AND GOVERNMENT TRANSFERS 1996

| | <HS | HS | Col | BA - | BA | BA + | MD | MA | PHD | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Canadian Born Females | | | | | | | | | | |
| Hours (All) | 14.13 | 22.17 | 24.43 | 24.81 | 28.97 | 30.25 | 38.42 | 32.27 | 36.04 | 21.30 |
| Weeks (All) | 21.05 | 32.50 | 35.53 | 35.79 | 40.02 | 40.48 | 44.91 | 42.15 | 43.79 | 30.81 |
| UI ($) | 458.00 | 578.12 | 707.75 | 628.09 | 759.40 | 638.31 | 292.60 | 599.96 | 420.71 | 594.11 |
| Govt. Transfer ($) | 1401.63 | 671.69 | 667.79 | 450.07 | 292.58 | 310.44 | 161.80 | 246.59 | 185.96 | 847.27 |
| Foreign Educated Immigrant Females | | | | | | | | | | |
| Hours (All) | 13.89 | 19.10 | 22.08 | 22.10 | 23.28 | 24.10 | 24.67 | 25.68 | 30.91 | 18.50 |
| Weeks (All) | 20.24 | 27.07 | 31.60 | 31.49 | 32.27 | 32.26 | 31.81 | 34.27 | 39.10 | 26.33 |
| UI ($) | 382.90 | 436.45 | 472.38 | 454.00 | 489.02 | 481.52 | 419.31 | 551.15 | 459.97 | 432.23 |
| Govt. Transfer ($) | 996.91 | 689.39 | 635.27 | 493.20 | 395.61 | 443.72 | 470.44 | 394.79 | 223.98 | 752.09 |
| Canadian Educated Immigrant Females | | | | | | | | | | |
| Hours (All) | 19.51 | 24.00 | 25.52 | 27.21 | 29.29 | 30.86 | 38.05 | 31.72 | 36.78 | 25.28 |
| Weeks (All) | 28.44 | 34.88 | 36.72 | 37.48 | 39.89 | 40.65 | 44.87 | 41.52 | 44.55 | 35.70 |
| UI ($) | 439.91 | 530.35 | 635.89 | 520.13 | 666.48 | 605.81 | 233.22 | 589.47 | 453.78 | 567.91 |
| Govt. Transfer ($) | 1007.44 | 605.74 | 664.15 | 499.64 | 302.15 | 265.30 | 176.27 | 241.00 | 285.00 | 615.77 |
| Canadian Born Males | | | | | | | | | | |
| | <HS | HS | Col | BA - | BA | BA + | MD | MA | PHD | Total |
| Hours (All) | 26.06 | 34.84 | 35.36 | 36.75 | 39.27 | 39.05 | 45.93 | 39.53 | 40.29 | 32.73 |
| Weeks (All) | 30.68 | 40.56 | 41.13 | 42.36 | 45.56 | 44.83 | 47.17 | 45.75 | 46.71 | 38.14 |
| UI ($) | 1013.26 | 774.14 | 873.86 | 525.01 | 407.51 | 305.12 | 93.78 | 273.85 | 227.36 | 819.80 |
| Govt. Transfer ($) | 1577.09 | 820.30 | 789.56 | 588.70 | 323.92 | 325.55 | 154.99 | 260.80 | 249.61 | 989.20 |
| Foreign Educated Immigrant Males | | | | | | | | | | |
| Hours (All) | 25.64 | 30.57 | 32.51 | 31.78 | 33.29 | 33.32 | 40.50 | 35.41 | 37.91 | 30.29 |
| Weeks (All) | 31.09 | 35.77 | 37.97 | 37.10 | 38.80 | 38.65 | 41.07 | 40.52 | 43.36 | 35.64 |
| UI ($) | 719.51 | 577.31 | 592.37 | 516.97 | 454.12 | 487.21 | 173.47 | 447.11 | 266.83 | 596.78 |
| Govt. Transfer ($) | 1484.60 | 1035.14 | 948.45 | 777.83 | 679.19 | 703.29 | 550.58 | 592.54 | 382.43 | 1073.34 |
| Canadian Educated Immigrant Males | | | | | | | | | | |
| Hours (All) | 32.24 | 35.57 | 36.71 | 36.28 | 38.94 | 38.57 | 47.58 | 39.73 | 40.91 | 36.55 |
| Weeks (All) | 37.44 | 41.68 | 42.75 | 41.60 | 44.81 | 44.38 | 46.97 | 45.56 | 46.91 | 42.29 |
| UI ($) | 675.27 | 556.73 | 590.34 | 375.29 | 380.94 | 315.01 | 122.72 | 309.28 | 173.28 | 518.48 |
| Govt. Transfer ($) | 1111.43 | 714.83 | 655.06 | 510.78 | 347.50 | 309.36 | 229.18 | 299.16 | 219.66 | 645.83 |

Source: 1996 Canadian census.

APPENDIX TABLE 2 - 1996 BACHELORS: UNEMPLOYMENT INSURANCE

| | Females | | | Males | | |
|---|---|---|---|---|---|---|
| Variables | Cdn Born | Foreign Edi | Cdn Educ | Cdn Born | Cdn Educ | Foreign Educ |
| Immigrant | 1.888*** | -0.107 | -0.140 | 1.382*** | 0.981** | 0.044 |
| | [0.047] | [0.397] | [0.126] | [0.041] | [0.413] | [0.104] |
| Vismin | -0.212*** | 0.277** | -0.093 | 0.029 | 0.132 | 0.050 |
| | [0.062] | [0.120] | [0.119] | [0.047] | [0.085] | [0.090] |
| Language Knowledge | | | | | | |
| French | 0.150*** | -0.383** | -0.162 | 0.196*** | -0.448*** | 0.547** |
| | [0.042] | [0.160] | [0.251] | [0.037] | [0.131] | [0.239] |
| Bilingual | 0.019 | -0.064 | -0.212*** | 0.066*** | 0.026 | -0.055 |
| | [0.024] | [0.071] | [0.064] | [0.020] | [0.052] | [0.048] |
| Neither | 1.256 | -1.527* | 0.878 | -0.481 | 0.704 | 0.983 |
| | [0.791] | [0.812] | [1.503] | [0.987] | [0.996] | [1.294] |
| Arrival Cohort | | | | | | |
| i9195 | | -0.556*** | -0.102 | | -0.012 | -0.350* |
| | | [0.152] | [0.214] | | [0.115] | [0.186] |
| i8690 | | -0.340** | -0.337** | | -0.008 | -0.317*** |
| | | [0.154] | [0.149] | | [0.116] | [0.117] |
| i8185 | | -0.216 | -0.125 | | -0.019 | -0.160 |
| | | [0.159] | [0.132] | | [0.119] | [0.101] |
| i7680 | | -0.110 | -0.005 | | -0.103 | -0.114 |
| | | [0.157] | [0.116] | | [0.119] | [0.087] |
| i7175 | | 0.049 | 0.031 | | -0.075 | -0.046 |
| | | [0.155] | [0.106] | | [0.115] | [0.078] |
| i6670 | | -0.075 | 0.126 | | -0.042 | -0.132* |
| | | [0.158] | [0.104] | | [0.117] | [0.076] |
| i5660 | | 0.149 | 0.202* | | -0.047 | 0.125 |
| | | [0.244] | [0.119] | | [0.184] | [0.082] |
| i2555 | | 0.066 | 0.297** | | 0.161 | 0.039 |
| | | [0.487] | [0.117] | | [0.398] | [0.079] |
| Age-at-Immigration | | | | | | |
| ia05 | | - | -0.246*** | | - | -0.144** |
| | | - | [0.086] | | - | [0.062] |
| ia610 | | - | -0.065 | | - | -0.175*** |
| | | - | [0.085] | | - | [0.061] |
| ia1115 | | - | -0.134 | | - | -0.181*** |
| | | - | [0.086] | | - | [0.061] |
| ia2125 | | 0.142 | 0.223*** | | -1.037*** | 0.095 |
| | | [0.369] | [0.083] | | [0.394] | [0.063] |
| ia2630 | | 0.186 | -0.148 | | -0.977** | 0.138 |
| | | [0.368] | [0.387] | | [0.394] | [0.245] |
| ia3135 | | 0.323 | - | | -0.837** | - |
| | | [0.370] | - | | [0.394] | - |
| ia3640 | | 0.597 | - | | -0.738* | - |
| | | [0.373] | - | | [0.396] | - |
| ia4145 | | 0.656* | - | | -0.836** | - |
| | | [0.378] | - | | [0.397] | - |
| ia4650 | | 0.704* | - | | -0.824** | - |
| | | [0.391] | - | | [0.402] | - |
| ia5165 | | 0.740* | - | | -0.913** | - |
| | | [0.397] | - | | [0.403] | - |
| Region of Origin | | | | | | |
| Western Europe | | 0.128 | 0.061 | | 0.014 | 0.073 |
| | | [0.128] | [0.089] | | [0.099] | [0.063] |
| Southern Europe | | -0.247 | 0.185* | | -0.124 | -0.032 |
| | | [0.253] | [0.109] | | [0.160] | [0.071] |
| Other Europe | | 0.345*** | 0.074 | | 0.314*** | 0.078 |
| | | [0.099] | [0.112] | | [0.072] | [0.079] |
| India & Pakistan | | 0.229* | 0.455*** | | 0.279*** | 0.045 |
| | | [0.128] | [0.137] | | [0.090] | [0.106] |
| China | | -0.114 | 0.116 | | -0.203** | -0.182* |
| | | [0.127] | [0.129] | | [0.090] | [0.095] |
| Japan & Korea | | -0.120 | -0.168 | | -0.119 | 0.019 |
| | | [0.159] | [0.217] | | [0.116] | [0.176] |
| South East Asia | | 0.196 | 0.108 | | 0.128 | -0.043 |
| | | [0.121] | [0.137] | | [0.090] | [0.108] |
| Africa | | 0.076 | 0.270** | | 0.204** | 0.090 |
| | | [0.125] | [0.128] | | [0.087] | [0.093] |
| Mexico & S. America | | 0.190 | 0.293** | | 0.242*** | 0.112 |
| | | [0.132] | [0.119] | | [0.094] | [0.092] |
| Other | | 0.075 | 0.091 | | 0.105 | 0.073 |
| | | [0.131] | [0.161] | | [0.089] | [0.111] |
| Field of Study Controls | | | | | | |
| Fields | | | Yes | | | Yes |
| Fields*Immig | | | Yes | | | Yes |
| Observations | | | 141980 | | | 146077 |
| R-squared | | | 0.054 | | | 0.032 |

Source: 1996 Canadian Census

Notes: Heteroskedastic consistent standard errors in brackets. Significance Level: * 10%; ** 5%; *** 1%. Also included in the regression are 9 province of residence indicators, 23 census metropolitan area indicators, 3 census area indicators for BC, ON, and PQ, and a fourth order polynomial in age.

APPENDIX TABLE 3 - 1996 BACHELORS UNEMPLOYMENT INSURANCE

| | Females | | | Males | | |
|---|---|---|---|---|---|---|
| Variable | Cdn Born | Foreign Educ | Cdn Educ | Cdn Born | Foreign Educ | Cdn Educ |
| Immigrant | 1.888*** | -0.107 | -0.140 | 1.382*** | 0.981** | 0.044 |
| | [0.047] | [0.397] | [0.126] | [0.041] | [0.413] | [0.104] |
| Fine & Applied Arts | | | | | | |
| Fine Arts | -0.183*** | 0.056 | 0.196 | 0.414*** | -0.151 | -0.186 |
| | [0.048] | [0.126] | [0.147] | [0.051] | [0.141] | [0.149] |
| Lit. & Humanities | | | | | | |
| History | -0.365*** | 0.419** | 0.383** | -0.019 | 0.144 | 0.200 |
| | [0.065] | [0.163] | [0.190] | [0.043] | [0.153] | [0.144] |
| Media Studies | -0.069 | -0.120 | -0.050 | 0.125** | -0.052 | 0.098 |
| | [0.065] | [0.182] | [0.209] | [0.056] | [0.183] | [0.178] |
| English | -0.216*** | 0.037 | 0.001 | 0.103** | -0.061 | 0.290* |
| | [0.047] | [0.135] | [0.137] | [0.052] | [0.150] | [0.155] |
| French | -0.268*** | 0.117 | 0.329 | 0.280** | 0.026 | -1.007** |
| | [0.085] | [0.251] | [0.237] | [0.124] | [0.349] | [0.441] |
| Other Literature | -0.150* | 0.020 | 0.340* | -0.036 | 0.407** | 0.281 |
| | [0.077] | [0.151] | [0.179] | [0.097] | [0.194] | [0.244] |
| Philosophy | -0.267*** | -0.018 | 0.155 | 0.006 | -0.188 | 0.148 |
| | [0.062] | [0.147] | [0.176] | [0.044] | [0.126] | [0.142] |
| Other Humanities | -0.258*** | 0.247 | 0.221 | 0.197** | 0.329 | -0.003 |
| | [0.069] | [0.258] | [0.212] | [0.081] | [0.293] | [0.264] |
| Social Science | | | | | | |
| Economics | -0.290*** | 0.166 | 0.084 | -0.209*** | 0.093 | 0.118 |
| | [0.077] | [0.144] | [0.171] | [0.037] | [0.104] | [0.111] |
| Geography | -0.314*** | 0.346 | 0.212 | 0.042 | -0.203 | 0.045 |
| | [0.070] | [0.251] | [0.236] | [0.043] | [0.186] | [0.144] |
| Political Science | -0.377*** | 0.216 | 0.534*** | -0.182*** | 0.262* | 0.092 |
| | [0.074] | [0.213] | [0.201] | [0.045] | [0.151] | [0.140] |
| Psychology | -0.154*** | -0.063 | 0.071 | 0.087* | 0.219 | 0.005 |
| | [0.039] | [0.143] | [0.124] | [0.045] | [0.186] | [0.139] |
| Sociology | -0.162*** | 0.030 | 0.190 | -0.038 | -0.165 | -0.041 |
| | [0.048] | [0.168] | [0.151] | [0.052] | [0.187] | [0.162] |
| Public Admin | -0.411*** | 0.257 | 0.464** | -0.268*** | 0.184 | 0.303* |
| | [0.058] | [0.224] | [0.215] | [0.041] | [0.169] | [0.183] |
| Commerce | -0.441*** | 0.199* | 0.255* | -0.292*** | 0.026 | 0.254*** |
| | [0.048] | [0.108] | [0.130] | [0.030] | [0.091] | [0.098] |
| Finance | -0.410*** | 0.427*** | 0.409*** | -0.382*** | 0.208** | 0.244** |
| | [0.048] | [0.104] | [0.132] | [0.031] | [0.091] | [0.100] |
| Marketing | -0.534*** | 0.507** | 0.663** | -0.291*** | 0.076 | 0.059 |
| | [0.082] | [0.234] | [0.271] | [0.056] | [0.177] | [0.198] |
| Law | -0.626*** | 0.363* | 0.693*** | -0.427*** | 0.411*** | 0.209* |
| | [0.058] | [0.203] | [0.190] | [0.035] | [0.129] | [0.126] |
| Other Soc Sci | -0.124*** | -0.074 | 0.331** | 0.011 | 0.067 | -0.133 |
| | [0.046] | [0.136] | [0.162] | [0.061] | [0.182] | [0.226] |
| Agri. & Bio Science | | | | | | |
| Agriculture Sci | -0.350*** | 0.591** | 0.251 | -0.349*** | 0.349** | 0.278 |
| | [0.112] | [0.255] | [0.309] | [0.057] | [0.150] | [0.230] |
| Biological Sci | -0.173*** | -0.112 | 0.217 | -0.077 | 0.237 | 0.228 |
| | [0.062] | [0.173] | [0.163] | [0.048] | [0.158] | [0.140] |
| Other Life Sci | -0.276*** | 0.179 | 0.130 | -0.095 | 0.335 | 0.119 |
| | [0.061] | [0.154] | [0.195] | [0.101] | [0.241] | [0.267] |
| Eng. & Applied Sci | | | | | | |
| Architecture | -0.085 | -0.288 | 0.007 | 0.103 | 0.052 | 0.096 |
| | [0.145] | [0.279] | [0.387] | [0.066] | [0.140] | [0.174] |
| Other Engineering | -0.329** | 0.006 | 0.396 | -0.328*** | 0.236*** | 0.169* |
| | [0.129] | [0.227] | [0.319] | [0.035] | [0.088] | [0.097] |
| Chemical Eng | -0.211 | 0.704** | 0.625 | -0.462*** | 0.214 | 0.183 |
| | [0.198] | [0.327] | [0.497] | [0.068] | [0.159] | [0.182] |
| Civil Engineering | -0.447** | 0.598** | 1.194** | -0.203*** | 0.246** | 0.068 |
| | [0.193] | [0.302] | [0.501] | [0.044] | [0.105] | [0.133] |
| Electrical Eng | -0.675*** | 0.852** | -0.120 | -0.536*** | 0.371*** | 0.392*** |
| | [0.243] | [0.339] | [0.417] | [0.043] | [0.098] | [0.110] |
| Mechanical Eng | -0.145 | 0.351 | 1.248** | -0.400*** | 0.358*** | 0.175 |
| | [0.192] | [0.321] | [0.497] | [0.040] | [0.093] | [0.111] |
| Forestry | -0.147 | -0.393 | -0.776 | -0.185*** | 0.007 | 0.012 |
| | [0.253] | [0.661] | [0.806] | [0.070] | [0.276] | [0.268] |
| Health Science | | | | | | |
| Medicine | -0.523*** | 0.136 | 0.549*** | -0.404*** | 0.114 | -0.058 |
| | [0.073] | [0.162] | [0.191] | [0.063] | [0.150] | [0.166] |
| Nursing | -0.192*** | -0.007 | 0.036 | -0.365*** | -0.156 | 0.505 |
| | [0.038] | [0.107] | [0.131] | [0.128] | [0.282] | [0.360] |
| Public Health | -0.219 | -0.259 | 1.427** | -0.349 | -0.208 | 0.601 |
| | [0.254] | [0.721] | [0.690] | [0.329] | [0.850] | [0.809] |
| Medical Techn | -0.397*** | 0.102 | 0.282 | -0.312** | 0.184 | 0.562 |
| | [0.126] | [0.223] | [0.314] | [0.156] | [0.262] | [0.359] |
| Natural Science | | | | | | |
| Mathematics | -0.272*** | 0.014 | 0.137 | -0.231*** | 0.227* | 0.067 |
| | [0.085] | [0.190] | [0.199] | [0.051] | [0.135] | [0.138] |
| Computer Sci | -0.600*** | 0.511*** | 0.266 | -0.511*** | 0.348*** | 0.330*** |
| | [0.084] | [0.172] | [0.179] | [0.041] | [0.109] | [0.107] |
| Chemistry | -0.464*** | 0.417* | 0.774*** | -0.156** | 0.055 | -0.001 |
| | [0.134] | [0.221] | [0.293] | [0.066] | [0.142] | [0.162] |
| Physics | -0.551* | 0.638 | 0.608 | -0.237*** | 0.337** | 0.095 |
| | [0.308] | [0.435] | [0.618] | [0.077] | [0.164] | [0.189] |
| Earth Sci | -0.584*** | 0.338 | 0.381 | -0.161*** | 0.205 | -0.082 |
| | [0.181] | [0.426] | [0.519] | [0.062] | [0.182] | [0.191] |
| Other Science | -0.331*** | 0.142 | 0.387* | -0.116** | 0.312** | 0.162 |
| | [0.094] | [0.199] | [0.225] | [0.056] | [0.143] | [0.147] |
| Trades & Technology | | | | | | |
| Trades | 2.166** | -2.917** | -3.857 | 0.196 | -0.357 | 0.099 |
| | [1.078] | [1.321] | [2.288] | [0.391] | [0.509] | [0.803] |
| Observations | | 141980 | | | 146077 | |
| R-squared | | 0.054 | | | 0.032 | |

Source: 1996 Canadian Census

Notes: Heteroskedastic consistent standard errors in brackets. Significance Level: * 10%, ** 5%, *** 1%

Also included in the regression are 9 province of residence indicators, 23 census metropolitan area indicators,
3 census area indicators for BC, ON, and PQ, and a fourth order polynomial in age.

APPENDIX TABLE 4 - 1996 COLLEGE: UNEMPLOYMENT INSURANCE

| | Females | | | Males | | |
|---|---|---|---|---|---|---|
| Variable | Cdn Born | Foreign Educ | Cdn Educ | Cdn Born | Foreign Educ | Cdn Educ |
| Immigrant | 2.209*** | -0.161 | 0.201* | 1.761*** | -0.138 | 0.048 |
| | [0.036] | [0.123] | [0.116] | [0.053] | [0.176] | [0.180] |
| Fine & Applied Arts | | | | | | |
| Fine Arts | -0.332*** | 0.153 | 0.017 | -0.052 | 0.005 | 0.030 |
| | [0.035] | [0.096] | [0.118] | [0.054] | [0.149] | [0.187] |
| Humanities | | | | | | |
| Media Studies | -0.141** | 0.261 | -0.263 | -0.184*** | 0.150 | -0.018 |
| | [0.056] | [0.200] | [0.215] | [0.065] | [0.234] | [0.239] |
| Literature | -0.279*** | 0.216 | -0.018 | -0.003 | 0.177 | -0.169 |
| | [0.088] | [0.177] | [0.259] | [0.131] | [0.280] | [0.413] |
| Philosophy | -0.299*** | -0.223 | 0.047 | -0.121* | -0.273 | 0.527** |
| | [0.056] | [0.197] | [0.236] | [0.065] | [0.207] | [0.267] |
| Othr. Humanities | -0.060 | -0.210 | 0.080 | -0.232* | 0.748** | 0.443 |
| | [0.127] | [0.288] | [0.403] | [0.132] | [0.348] | [0.495] |
| Social Science | | | | | | |
| Economics | 0.000 | -0.001 | -0.825 | -0.233 | 0.245 | 0.270 |
| | [0.291] | [0.346] | [0.535] | [0.171] | [0.320] | [0.496] |
| Geography | -0.206 | 1.106* | 0.190 | -0.152 | 0.038 | -0.146 |
| | [0.168] | [0.607] | [0.646] | [0.115] | [0.407] | [0.438] |
| Political Science | -0.298 | 0.280 | 2.602*** | 0.137 | -0.280 | -0.588 |
| | [0.323] | [0.639] | [0.977] | [0.218] | [0.661] | [0.684] |
| Psychology | -0.051 | -0.172 | -0.074 | 0.073 | -0.435 | 0.151 |
| | [0.081] | [0.321] | [0.307] | [0.137] | [0.597] | [0.522] |
| Socology Crim | -0.284** | 1.111** | 0.687 | -0.495*** | 0.511 | 0.271 |
| | [0.141] | [0.483] | [0.470] | [0.131] | [0.490] | [0.399] |
| Public Admin | -0.215*** | 0.145 | 0.108 | -0.126** | 0.056 | 0.113 |
| | [0.042] | [0.135] | [0.161] | [0.055] | [0.165] | [0.206] |
| Commerce | -0.243*** | 0.259*** | -0.016 | -0.305*** | 0.027 | 0.244 |
| | [0.033] | [0.090] | [0.111] | [0.050] | [0.143] | [0.177] |
| Finance | -0.123*** | 0.206** | -0.017 | -0.318*** | 0.176 | 0.209 |
| | [0.030] | [0.081] | [0.102] | [0.049] | [0.134] | [0.176] |
| Secretary Stud | -0.172*** | 0.120* | 0.003 | -0.106 | 0.064 | 0.044 |
| | [0.024] | [0.071] | [0.092] | [0.072] | [0.200] | [0.279] |
| Law | -0.080 | -0.295 | -0.174 | -0.465*** | 0.259 | 0.301 |
| | [0.116] | [0.387] | [0.362] | [0.130] | [0.385] | [0.478] |
| Other Social Sci | -0.083** | 0.275** | -0.036 | -0.393*** | 0.451** | 0.220 |
| | [0.036] | [0.133] | [0.138] | [0.051] | [0.190] | [0.199] |
| Agricultural & Bio Sci | | | | | | |
| Agriculture Sci | -0.095 | -0.217 | -0.241 | -0.195*** | 0.008 | 0.173 |
| | [0.067] | [0.210] | [0.280] | [0.061] | [0.164] | [0.227] |
| Other Life Sci | -0.205 | 1.143*** | 0.450 | -0.276* | 0.380 | 0.377 |
| | [0.143] | [0.399] | [0.437] | [0.146] | [0.417] | [0.511] |
| Home Ec. | -0.114** | 0.213 | -0.044 | 0.290*** | -0.218 | -0.071 |
| | [0.057] | [0.130] | [0.213] | [0.075] | [0.183] | [0.254] |
| Fisheries | 0.227 | -0.107 | -0.538 | 0.716*** | -0.834*** | -0.788* |
| | [0.205] | [0.555] | [0.757] | [0.102] | [0.261] | [0.417] |
| Eng. & Applied Science | | | | | | |
| Forestry | 0.421** | 0.543 | 1.039 | 0.459*** | -0.154 | -0.229 |
| | [0.192] | [1.045] | [1.046] | [0.076] | [0.374] | [0.326] |
| Landscape Arch | -0.341*** | 0.643* | 1.154*** | -0.010 | 0.197 | 0.233 |
| | [0.116] | [0.338] | [0.425] | [0.068] | [0.216] | [0.216] |
| Health Science | | | | | | |
| Nursing | -0.365*** | 0.217*** | 0.013 | -0.501*** | 0.083 | 0.229 |
| | [0.025] | [0.071] | [0.099] | [0.080] | [0.215] | [0.294] |
| Medical Assist. | -0.233*** | 0.221** | -0.160 | -0.141 | 0.003 | 0.289 |
| | [0.035] | [0.106] | [0.147] | [0.097] | [0.281] | [0.356] |
| Public Health | 0.121 | 0.490 | -0.483 | -0.263* | 0.254 | 0.649 |
| | [0.074] | [0.341] | [0.320] | [0.143] | [0.481] | [0.555] |
| Medical Techn. | -0.253*** | 0.440*** | -0.002 | -0.432*** | 0.247 | 0.185 |
| | [0.034] | [0.114] | [0.127] | [0.062] | [0.184] | [0.224] |
| Natural Science | | | | | | |
| Chemistry | -0.351* | 0.308 | -0.250 | -0.528*** | 0.662** | 0.419 |
| | [0.205] | [0.339] | [0.481] | [0.122] | [0.274] | [0.360] |
| Physics | 0.298 | -0.118 | -1.601 | 0.269 | -0.878* | -0.886 |
| | [0.580] | [0.949] | [1.776] | [0.278] | [0.521] | [0.807] |
| Earth Science | -0.220 | 0.295 | -0.452 | -0.233** | -0.065 | 0.188 |
| | [0.233] | [0.639] | [0.908] | [0.108] | [0.303] | [0.421] |
| Other Science | -0.366*** | 0.412* | 0.035 | -0.283*** | 0.143 | 0.690** |
| | [0.077] | [0.212] | [0.268] | [0.089] | [0.254] | [0.283] |
| Trades & Technology | | | | | | |
| Building Tech. | -0.033 | 0.175 | -0.162 | 0.076 | -0.110 | 0.117 |
| | [0.112] | [0.248] | [0.322] | [0.054] | [0.148] | [0.194] |
| Trades | 0.060 | 0.309 | -0.668** | 0.338*** | -0.235* | 0.047 |
| | [0.091] | [0.219] | [0.286] | [0.046] | [0.129] | [0.170] |
| Electronics Tech | -0.067* | 0.168 | -0.143 | -0.364*** | 0.233* | 0.327** |
| | [0.038] | [0.107] | [0.123] | [0.045] | [0.126] | [0.164] |
| Environ. Tech | 0.394** | -0.932 | 0.486 | 0.101 | 0.233 | -0.090 |
| | [0.179] | [0.749] | [0.730] | [0.080] | [0.272] | [0.327] |
| Mechanic | 0.109 | 0.234 | -0.559 | -0.113** | 0.097 | 0.094 |
| | [0.117] | [0.299] | [0.442] | [0.046] | [0.128] | [0.172] |
| Transport Tech | -0.080 | -0.009 | -0.377 | 0.036 | -0.080 | -0.055 |
| | [0.111] | [0.250] | [0.381] | [0.055] | [0.139] | [0.187] |
| Observations | | 266146 | | | 190273 | |
| R-squared | | 0.035 | | | 0.037 | |

Source: 1996 Canadian Census

Notes: Heteroskedastic consistent standard errors in brackets. Significance Level: * 10%; ** 5%; *** 1%

Also included in the regression are 9 province of residence indicators, 23 census metropolitan area indicators, 3 census area indicators for BC, ON, and PQ, and a fourth order polynomial in age.

APPENDIX TABLE 5 - 1996 MASTER'S: UNEMPLOYMENT INSURANCE

| | Females | | | Males | | |
|---|---|---|---|---|---|---|
| Variable | Cdn Born | Foreign Educ | Cdn Educ | Cdn Born | Foreign Educ | Cdn Educ |
| Immigrant | 1.072*** | -0.349 | -0.192 | 1.191*** | -0.420 | 0.102 |
| | [0.127] | [2.657] | [0.209] | [0.089] | [1.019] | [0.137] |
| Fine & Applied Arts | | | | | | |
| Fine Arts | 0.415*** | -0.312 | -0.472* | 0.640*** | -0.816*** | -0.237 |
| | [0.109] | [0.223] | [0.284] | [0.088] | [0.186] | [0.239] |
| Lit. & Humanities | | | | | | |
| History | 0.115 | -0.442 | -0.170 | 0.139* | -0.377* | 0.533*** |
| | [0.156] | [0.283] | [0.333] | [0.082] | [0.195] | [0.205] |
| Media Studies | 0.078 | -0.132 | -0.275 | 0.240*** | -0.493** | 0.119 |
| | [0.080] | [0.221] | [0.222] | [0.088] | [0.221] | [0.245] |
| English | 0.112 | -0.127 | 0.150 | 0.249** | -0.328 | -0.235 |
| | [0.122] | [0.233] | [0.268] | [0.097] | [0.221] | [0.240] |
| French | 0.496*** | -0.579 | -0.603 | -0.104 | -0.075 | 0.248 |
| | [0.191] | [0.444] | [0.480] | [0.201] | [0.437] | [0.525] |
| Other Literature | 0.168 | -0.411* | -0.325 | 0.211 | -0.264 | 0.118 |
| | [0.146] | [0.229] | [0.270] | [0.135] | [0.240] | [0.261] |
| Philosophy | -0.188* | 0.156 | 0.218 | -0.012 | -0.224* | 0.427*** |
| | [0.104] | [0.290] | [0.328] | [0.051] | [0.134] | [0.155] |
| Other Humanities | 0.158 | -0.496 | 0.827** | 0.657*** | -0.669** | 0.174 |
| | [0.146] | [0.374] | [0.396] | [0.130] | [0.320] | [0.339] |
| Social Science | | | | | | |
| Economics | -0.409** | 0.104 | 0.538 | -0.060 | -0.038 | 0.337* |
| | [0.164] | [0.257] | [0.357] | [0.068] | [0.141] | [0.179] |
| Geography | 0.103 | -0.464 | 0.020 | 0.290*** | -0.445** | -0.046 |
| | [0.130] | [0.337] | [0.354] | [0.072] | [0.209] | [0.213] |
| Political Science | 0.211 | 0.046 | -0.769* | 0.107 | -0.619*** | 0.337 |
| | [0.169] | [0.338] | [0.398] | [0.090] | [0.216] | [0.229] |
| Psychology | -0.002 | -0.301 | 0.154 | 0.034 | -0.695*** | 0.246 |
| | [0.083] | [0.224] | [0.250] | [0.073] | [0.234] | [0.214] |
| Sociology Crim | -0.055 | 0.118 | 0.177 | 0.197* | 1.196*** | 1.164*** |
| | [0.145] | [0.315] | [0.368] | [0.102] | [0.290] | [0.292] |
| Public Admin | -0.322*** | -0.187 | 0.267 | -0.113* | -0.009 | 0.428** |
| | [0.099] | [0.312] | [0.308] | [0.058] | [0.192] | [0.211] |
| Commerce | -0.344*** | -0.159 | -0.087 | -0.112*** | -0.178 | 0.236** |
| | [0.083] | [0.212] | [0.215] | [0.041] | [0.111] | [0.114] |
| Finance | -0.483*** | 0.395 | 0.079 | -0.157** | -0.372*** | 0.213 |
| | [0.153] | [0.268] | [0.334] | [0.063] | [0.138] | [0.173] |
| Marketing | -0.241 | 0.653 | 0.181 | -0.264** | -0.062 | 0.520 |
| | [0.228] | [0.592] | [0.567] | [0.119] | [0.288] | [0.332] |
| Law | -0.225 | 0.197 | -0.070 | -0.197*** | -0.321* | 0.242 |
| | [0.143] | [0.313] | [0.387] | [0.069] | [0.184] | [0.196] |
| Other Soc Sci | -0.031 | -0.229 | 0.285 | -0.037 | -0.175 | 0.339 |
| | [0.076] | [0.211] | [0.215] | [0.076] | [0.205] | [0.222] |
| Agri. & Bio Science | | | | | | |
| Agricultural Sci | 0.174 | -0.343 | 0.509 | -0.095 | -0.474** | 0.206 |
| | [0.289] | [0.451] | [0.685] | [0.122] | [0.224] | [0.372] |
| Biological Sci | 0.190 | -0.769*** | -0.408 | 0.156* | -0.408* | 0.460* |
| | [0.137] | [0.265] | [0.319] | [0.089] | [0.233] | [0.245] |
| Other Life Sci | -0.095 | 0.245 | 1.095** | -0.091 | -0.262 | 0.225 |
| | [0.175] | [0.310] | [0.441] | [0.143] | [0.277] | [0.374] |
| Eng. & Applied Sci | | | | | | |
| Architecture | -0.085 | 0.037 | 0.765 | 0.231* | -0.753*** | -0.194 |
| | [0.283] | [0.431] | [0.747] | [0.118] | [0.196] | [0.281] |
| Other Engineering | -0.028 | -0.305 | -1.005* | -0.199*** | -0.227* | 0.350** |
| | [0.216] | [0.318] | [0.556] | [0.063] | [0.116] | [0.137] |
| Chemical Eng | 0.252 | -0.619 | -0.624 | -0.370*** | 0.070 | 0.599** |
| | [0.476] | [0.640] | [0.808] | [0.140] | [0.218] | [0.281] |
| Civil Engineering | -0.469 | 0.327 | 0.987 | -0.147* | -0.142 | 0.325 |
| | [0.391] | [0.503] | [0.720] | [0.086] | [0.143] | [0.201] |
| Electrical Eng | 0.141 | -0.432 | -0.307 | -0.126 | -0.382*** | 0.161 |
| | [0.500] | [0.583] | [0.925] | [0.092] | [0.144] | [0.182] |
| Mechanical Eng | 0.473 | -0.740 | -1.023 | -0.243** | -0.005 | 0.207 |
| | [0.465] | [0.548] | [1.053] | [0.106] | [0.151] | [0.201] |
| Forestry | -0.280 | 1.626 | -1.363 | -0.234 | 0.007 | -0.069 |
| | [0.520] | [1.294] | [1.619] | [0.169] | [0.376] | [0.458] |
| Health Science | | | | | | |
| Medicine | -0.380*** | -0.237 | -0.342 | -0.198** | -0.407** | 0.145 |
| | [0.139] | [0.251] | [0.314] | [0.077] | [0.160] | [0.181] |
| Other Health | 0.021 | -0.114 | 0.061 | -0.077 | -0.187 | 0.573 |
| | [0.078] | [0.207] | [0.233] | [0.148] | [0.293] | [0.368] |
| Natural Science | | | | | | |
| Mathematics | -0.008 | -0.547 | -0.098 | [0.099] | [0.189] | [0.222] |
| | [0.242] | [0.341] | [0.495] | -0.241** | -0.349** | 0.446** |
| Computer Science | 0.217 | -0.797** | 0.214 | [0.097] | [0.157] | [0.199] |
| | [0.274] | [0.360] | [0.484] | -0.147 | -0.341 | 0.122 |
| Chemistry | -0.108 | -0.288 | 0.153 | [0.130] | [0.214] | [0.286] |
| | [0.279] | [0.365] | [0.526] | -0.022 | -0.363* | 0.236 |
| Physical Science | 0.607 | -0.776 | -0.576 | [0.125] | [0.215] | [0.265] |
| | [0.540] | [0.660] | [0.971] | -0.074 | -0.378* | 0.347 |
| Earth Science | 0.342 | -0.824* | -0.004 | [0.098] | [0.197] | [0.236] |
| | [0.259] | [0.454] | [0.718] | 0.041 | -0.206 | 0.294 |
| Other Science | 0.008 | 0.484 | 0.206 | [0.149] | [0.296] | [0.346] |
| | [0.278] | [0.474] | [0.555] | [0.149] | [0.296] | [0.346] |
| Observations | | 30253 | | | 44963 | |
| R-squared | | 0.053 | | | 0.031 | |

Source: 1996 Canadian Census

Notes: Heteroskedastic consistent standard errors in brackets. Significance Level: * 10%; ** 5%; *** 1%

Also included in the regression are 9 province of residence indicators, 23 census metropolitan area indicators, 3 census area indicators for BC, ON, and PQ, and a fourth order polynomial in age.

APPENDIX TABLE 6 - 1996 BACHELORS: GOVERNMENTAL TRANSFERS

| | Females | | | Males | | |
|---|---|---|---|---|---|---|
| Variables | Cdn Born | Foreign Educ | Cdn Educ | Cdn Born | Foreign Educ | Cdn Educ |
| Immigrant | 3.349*** | -0.184 | -0.065 | 4.892*** | 0.303 | -0.183 |
| | [0.045] | [0.377] | [0.119] | [0.051] | [0.517] | [0.131] |
| Vismin | 0.548*** | 0.038 | 0.064 | 0.593*** | 0.231** | -0.294*** |
| | [0.059] | [0.114] | [0.113] | [0.059] | [0.107] | [0.112] |
| Language Knowledge | | | | | | |
| French | 0.246*** | 0.205 | -0.554** | 0.319*** | 0.716*** | 0.613** |
| | [0.040] | [0.152] | [0.239] | [0.046] | [0.165] | [0.299] |
| Bilingual | 0.051** | -0.043 | -0.115* | 0.064*** | 0.036 | 0.028 |
| | [0.023] | [0.068] | [0.061] | [0.025] | [0.065] | [0.060] |
| Neither | 1.298* | -1.487* | -0.405 | 1.490 | -0.996 | 1.433 |
| | [0.752] | [0.772] | [1.430] | [1.236] | [1.247] | [1.620] |
| Arrival Cohort | | | | | | |
| i9195 | | 0.230 | -0.188 | | 1.327*** | 0.361 |
| | | [0.145] | [0.203] | | [0.144] | [0.233] |
| i8690 | | 0.167 | 0.296** | | 0.902*** | 0.816*** |
| | | [0.146] | [0.142] | | [0.145] | [0.147] |
| i8185 | | 0.075 | 0.309** | | 0.517*** | 0.590*** |
| | | [0.151] | [0.125] | | [0.150] | [0.127] |
| i7680 | | -0.104 | 0.200* | | 0.229 | 0.410*** |
| | | [0.150] | [0.110] | | [0.149] | [0.109] |
| i7175 | | -0.047 | 0.054 | | 0.304** | 0.307*** |
| | | [0.147] | [0.101] | | [0.144] | [0.098] |
| i6670 | | -0.077 | 0.097 | | 0.209 | 0.077 |
| | | [0.150] | [0.099] | | [0.147] | [0.095] |
| i5660 | | -0.145 | -0.201* | | 0.039 | 0.030 |
| | | [0.232] | [0.113] | | [0.230] | [0.102] |
| i2555 | | -0.551 | -0.355*** | | 0.572 | 0.044 |
| | | [0.463] | [0.112] | | [0.498] | [0.099] |
| Age-at-Immigration | | | | | | |
| ia05 | | - | 0.268*** | | - | 0.113 |
| | | - | [0.081] | | - | [0.077] |
| ia610 | | - | 0.208** | | - | -0.163** |
| | | - | [0.081] | | - | [0.076] |
| ia1115 | | - | 0.037 | | - | -0.057 |
| | | - | [0.082] | | - | [0.077] |
| ia2125 | | -0.303 | -0.143* | | -1.170** | 0.223*** |
| | | [0.351] | [0.078] | | [0.493] | [0.079] |
| ia2630 | | -0.056 | 0.168 | | -1.042** | 0.563* |
| | | [0.350] | [0.368] | | [0.493] | [0.307] |
| ia3135 | | 0.169 | - | | -0.593 | - |
| | | [0.352] | - | | [0.494] | - |
| ia3640 | | 0.276 | - | | -0.188 | - |
| | | [0.355] | - | | [0.495] | - |
| ia4145 | | 0.356 | - | | -0.045 | - |
| | | [0.360] | - | | [0.497] | - |
| ia4650 | | 0.372 | - | | -0.024 | - |
| | | [0.372] | - | | [0.503] | - |
| ia5165 | | 0.155 | - | | -0.289 | - |
| | | [0.377] | - | | [0.504] | - |
| Region of Origin | | | | | | |
| Western Europe | | 0.195 | 0.042 | | 0.596*** | 0.239*** |
| | | [0.122] | [0.085] | | [0.124] | [0.079] |
| Southern Europe | | 0.570** | -0.261** | | 1.344*** | 0.158* |
| | | [0.240] | [0.104] | | [0.200] | [0.089] |
| Other Europe | | 0.739*** | 0.075 | | 1.837*** | 0.324*** |
| | | [0.094] | [0.106] | | [0.090] | [0.099] |
| India & Pakistan | | -0.540*** | -0.759*** | | 0.921*** | 0.332** |
| | | [0.122] | [0.131] | | [0.113] | [0.133] |
| China | | -0.335*** | -0.316** | | 0.332*** | 0.337*** |
| | | [0.120] | [0.123] | | [0.113] | [0.119] |
| Japan & Korea | | -0.574*** | -0.260 | | 0.810*** | 0.798*** |
| | | [0.151] | [0.207] | | [0.145] | [0.220] |
| South East Asia | | 0.218* | -0.304** | | 0.491*** | 0.323** |
| | | [0.115] | [0.130] | | [0.113] | [0.135] |
| Africa | | -0.052 | -0.192 | | 0.838*** | 0.184 |
| | | [0.119] | [0.122] | | [0.109] | [0.116] |
| Mexico & S. America | | 0.437*** | 0.252** | | 0.667*** | 0.477*** |
| | | [0.125] | [0.113] | | [0.118] | [0.115] |
| Other | | 0.151 | -0.166 | | 1.442*** | 0.689*** |
| | | [0.125] | [0.153] | | [0.111] | [0.139] |
| Field of Study Controls | | | | | | |
| Fields | | | Yes | | | Yes |
| Fields*Immig | | | Yes | | | Yes |
| Observations | | | 141980 | | | 146077 |
| R-squared | | | 0.087 | | | 0.156 |

Source: 1996 Canadian Census

Notes: Heteroskedastic consistent standard errors in brackets. Significance Level: * 10%; ** 5%; *** 1%. Also included in the regression are 9 province of residence indicators, 23 census metropolitan area indicators, 3 census area indicators for BC, ON, and PQ, and a fourth order polynomial in age.

APPENDIX TABLE 7 - 1996 BACHELORS GOVERNMENTAL TRANSFERS

| | Female | | | Male | | |
|---|---|---|---|---|---|---|
| Variable | Cdn Born | Foreign Educ | Cdn Educ | Cdn Born | Foreign Educ | Cdn Educ |
| Immigrant | 3.349*** | -0.184 | -0.065 | 4.892*** | 0.303 | -0.183 |
| | [0.045] | [0.377] | [0.119] | [0.051] | [0.517] | [0.131] |
| Fine & Applied Arts | | | | | | |
| Fine Arts | 0.915*** | -0.742*** | -0.198 | 1.497*** | -0.733*** | -0.416** |
| | [0.046] | [0.120] | [0.140] | [0.063] | [0.177] | [0.187] |
| Lit. & Humanities | | | | | | |
| History | 0.428*** | -0.290* | -0.118 | 0.563*** | -0.218 | 0.104 |
| | [0.061] | [0.155] | [0.181] | [0.054] | [0.191] | [0.180] |
| Media Studies | 0.478*** | -0.217 | -0.089 | 0.599*** | 0.035 | 0.422* |
| | [0.062] | [0.174] | [0.198] | [0.070] | [0.229] | [0.223] |
| English | 0.357*** | -0.297** | -0.054 | 0.852*** | -0.387** | -0.159 |
| | [0.045] | [0.128] | [0.130] | [0.065] | [0.187] | [0.195] |
| French | 0.390*** | -0.248 | -0.492** | 0.664*** | -0.060 | 1.049* |
| | [0.081] | [0.239] | [0.225] | [0.155] | [0.437] | [0.552] |
| Other Literature | 0.422*** | -0.487*** | -0.210 | 0.676*** | 0.014 | 0.087 |
| | [0.073] | [0.144] | [0.170] | [0.122] | [0.243] | [0.305] |
| Philosophy | 0.718*** | -0.664*** | -0.380** | 1.401*** | -0.932*** | -0.373** |
| | [0.059] | [0.140] | [0.168] | [0.055] | [0.158] | [0.178] |
| Other Humanities | 0.700*** | -0.424* | -0.194 | 0.913*** | 0.061 | -0.217 |
| | [0.066] | [0.246] | [0.202] | [0.101] | [0.367] | [0.331] |
| Social Science | | | | | | |
| Economics | 0.045 | 0.269* | 0.357** | -0.058 | -0.086 | 0.136 |
| | [0.073] | [0.137] | [0.163] | [0.046] | [0.130] | [0.139] |
| Geography | 0.216*** | -0.037 | -0.025 | 0.263*** | -0.398* | -0.289 |
| | [0.067] | [0.239] | [0.225] | [0.053] | [0.232] | [0.180] |
| Political Science | 0.456*** | -0.306 | -0.290 | 0.275*** | 0.161 | -0.066 |
| | [0.070] | [0.203] | [0.191] | [0.057] | [0.189] | [0.175] |
| Psychology | 0.418*** | -0.042 | 0.001 | 0.469*** | -0.101 | 0.016 |
| | [0.038] | [0.136] | [0.118] | [0.056] | [0.237] | [0.174] |
| Sociology | 0.534*** | -0.017 | 0.041 | 0.270*** | 0.191 | 0.472** |
| | [0.046] | [0.160] | [0.143] | [0.065] | [0.234] | [0.202] |
| Public Admin | -0.115** | 0.242 | 0.128 | -0.359*** | 0.224 | 0.138 |
| | [0.056] | [0.213] | [0.204] | [0.051] | [0.212] | [0.230] |
| Commerce | -0.072 | 0.256** | 0.060 | -0.296*** | 0.406*** | 0.351*** |
| | [0.046] | [0.102] | [0.124] | [0.037] | [0.114] | [0.123] |
| Finance | -0.374*** | 0.370*** | 0.249** | -0.446*** | 0.205* | 0.182 |
| | [0.046] | [0.098] | [0.125] | [0.038] | [0.114] | [0.125] |
| Marketing | -0.009 | 0.166 | 0.137 | -0.200*** | 0.360 | -0.034 |
| | [0.078] | [0.222] | [0.258] | [0.071] | [0.221] | [0.247] |
| Law | -0.077 | 0.319* | -0.002 | -0.747*** | 0.703*** | 0.192 |
| | [0.055] | [0.193] | [0.180] | [0.044] | [0.162] | [0.157] |
| Other Soc Sci | 0.513*** | -0.088 | -0.058 | 0.532*** | -0.006 | 0.711** |
| | [0.044] | [0.129] | [0.154] | [0.077] | [0.228] | [0.282] |
| Agri. & Bio Science | | | | | | |
| Agriculture Sci | 0.137 | 0.158 | -0.286 | 0.457*** | 0.071 | -0.025 |
| | [0.106] | [0.243] | [0.351] | [0.071] | [0.188] | [0.288] |
| Biological Sci | 0.219*** | -0.380** | -0.233 | 0.229*** | 0.102 | -0.279 |
| | [0.059] | [0.164] | [0.156] | [0.061] | [0.198] | [0.175] |
| Other Life Sci | -0.171*** | 0.325** | 0.308* | 0.570*** | -0.443 | 0.592* |
| | [0.058] | [0.146] | [0.185] | [0.127] | [0.302] | [0.334] |
| Eng. & Applied Sci | | | | | | |
| Architecture | 0.373*** | -0.604** | -0.050 | 0.423*** | -0.166 | 0.314 |
| | [0.138] | [0.265] | [0.368] | [0.082] | [0.175] | [0.218] |
| Other Engineering | -0.149 | 0.183 | 0.205 | -0.677*** | 0.151 | 0.162 |
| | [0.123] | [0.216] | [0.303] | [0.043] | [0.110] | [0.122] |
| Chemical Eng | -0.599*** | 0.172 | 0.406 | -1.107*** | 0.554*** | 0.256 |
| | [0.188] | [0.311] | [0.473] | [0.085] | [0.199] | [0.228] |
| Civil Engineering | -0.391** | 0.182 | -0.142 | -0.769*** | 0.558*** | 0.145 |
| | [0.184] | [0.287] | [0.476] | [0.056] | [0.131] | [0.166] |
| Electrical Eng | -0.759*** | 0.917*** | 0.053 | -0.886*** | 0.486*** | 0.195 |
| | [0.231] | [0.322] | [0.396] | [0.053] | [0.122] | [0.138] |
| Mechanical Eng. | -0.335* | 0.476 | -0.268 | -0.802*** | 0.501*** | 0.218 |
| | [0.183] | [0.305] | [0.473] | [0.050] | [0.117] | [0.139] |
| Forestry | -0.422* | 1.181* | 0.519 | -0.601*** | 1.032*** | 0.009 |
| | [0.240] | [0.629] | [0.766] | [0.088] | [0.346] | [0.336] |
| Health Science | | | | | | |
| Medicine | -0.699*** | 0.424*** | -0.114 | -0.948*** | 0.162 | -0.293 |
| | [0.070] | [0.154] | [0.181] | [0.079] | [0.188] | [0.208] |
| Nursing | -0.244*** | 0.116 | 0.113 | -0.078 | 0.180 | -0.359 |
| | [0.036] | [0.102] | [0.125] | [0.161] | [0.353] | [0.450] |
| Public Health | -0.205 | 0.498 | 0.128 | -1.184*** | -1.338 | 0.871 |
| | [0.241] | [0.686] | [0.656] | [0.412] | [1.064] | [1.013] |
| Medical Techn. | -0.031 | 0.335 | -0.126 | 0.444** | -0.834** | 0.032 |
| | [0.120] | [0.212] | [0.299] | [0.196] | [0.328] | [0.449] |
| Natural Science | | | | | | |
| Mathematics | -0.333*** | 0.287 | 0.169 | -0.332*** | 0.386** | 0.103 |
| | [0.080] | [0.180] | [0.189] | [0.064] | [0.169] | [0.173] |
| Computer Sci | -0.389*** | 0.069 | -0.171 | -0.644*** | -0.254* | 0.056 |
| | [0.080] | [0.164] | [0.170] | [0.051] | [0.137] | [0.134] |
| Chemistry | -0.128 | -0.234 | 0.312 | -0.235*** | 0.277 | -0.050 |
| | [0.127] | [0.210] | [0.279] | [0.083] | [0.178] | [0.203] |
| Physics | -0.442 | 0.292 | 0.253 | -0.004 | 0.151 | 0.125 |
| | [0.293] | [0.414] | [0.586] | [0.096] | [0.206] | [0.236] |
| Earth Sci | 0.122 | -0.485 | -0.540 | -0.370*** | 0.275 | 0.449* |
| | [0.172] | [0.405] | [0.493] | [0.077] | [0.228] | [0.238] |
| Other Science | 0.018 | 0.069 | 0.035 | -0.109 | 0.620*** | 0.241 |
| | [0.090] | [0.189] | [0.214] | [0.071] | [0.179] | [0.184] |
| Trades & Technology | | | | | | |
| Trades | -1.051 | 1.397 | 2.936 | -0.986** | 1.833*** | 0.684 |
| | [1.025] | [1.257] | [2.176] | [0.489] | [0.637] | [1.005] |
| Observations | | 141980 | | | 146077 | |
| R-squared | | 0.087 | | | 0.156 | |

Source: 1996 Canadian Census

Notes: Heteroskedastic consistent standard errors in brackets. Significance Level: * 10%, ** 5%, *** 1%

Also included in the regression are 9 province of residence indicators, 23 census metropolitan area indicators, 3 census area indicators for BC, ON, and PQ, and a fourth order polynomial in age

APPENDIX TABLE 8 - 1996 COLLEGE: GOVERNMENT TRANSFERS

| | Female | | | Male | | |
|---|---|---|---|---|---|---|
| Variable | Cdn Born | Foreign Educ | Cdn Educ | Cdn Born | Foreign Educ | Cdn Educ |
| Immigrant | 3.046*** | -0.596*** | -0.224* | 5.265*** | -0.600*** | 0.207 |
| | [0.038] | [0.130] | [0.123] | [0.060] | [0.198] | [0.202] |
| Fine & Applied Arts | | | | | | |
| Fine Arts | 0.392*** | -0.076 | 0.235* | 0.388*** | 0.028 | -0.473** |
| | [0.037] | [0.102] | [0.125] | [0.061] | [0.168] | [0.210] |
| Humanities | | | | | | |
| Media Studies | 0.329*** | -0.495** | 0.353 | 0.013 | 0.270 | 0.094 |
| | [0.060] | [0.212] | [0.229] | [0.073] | [0.264] | [0.270] |
| Literature | 0.553*** | 0.047 | 0.056 | 0.740*** | -0.732** | -0.806* |
| | [0.094] | [0.188] | [0.275] | [0.147] | [0.316] | [0.465] |
| Philosophy | 0.100* | -0.042 | -0.134 | 0.451*** | 0.276 | 0.148 |
| | [0.059] | [0.209] | [0.250] | [0.074] | [0.233] | [0.301] |
| Othr. Humanities | 1.091*** | -0.740** | 0.000 | 0.380** | 0.554 | 0.448 |
| | [0.135] | [0.306] | [0.428] | [0.149] | [0.393] | [0.558] |
| Social Science | | | | | | |
| Economics | 0.929*** | -0.968*** | -1.229** | -0.440** | 0.725** | 0.207 |
| | [0.309] | [0.367] | [0.569] | [0.193] | [0.361] | [0.559] |
| Geography | 0.273 | -0.456 | -0.435 | -0.438*** | -0.121 | -0.996** |
| | [0.179] | [0.644] | [0.686] | [0.129] | [0.459] | [0.493] |
| Political Science | 0.360 | 0.143 | 1.124 | 0.056 | 0.551 | -1.008 |
| | [0.343] | [0.679] | [1.037] | [0.246] | [0.745] | [0.771] |
| Psychology | 0.773*** | -0.416 | -0.301 | 0.312** | 0.451 | -1.410** |
| | [0.086] | [0.341] | [0.326] | [0.154] | [0.673] | [0.589] |
| Socology Crim | 0.290* | 0.178 | -0.229 | -0.740*** | 0.989* | -0.637 |
| | [0.150] | [0.513] | [0.499] | [0.148] | [0.553] | [0.450] |
| Public Admin | 0.029 | 0.157 | -0.157 | -0.332*** | 0.058 | -0.234 |
| | [0.044] | [0.143] | [0.170] | [0.062] | [0.186] | [0.232] |
| Commerce | 0.059* | 0.068 | -0.108 | -0.574*** | 0.380** | -0.163 |
| | [0.035] | [0.096] | [0.118] | [0.056] | [0.162] | [0.199] |
| Finance | 0.101*** | -0.160* | -0.197* | -0.490*** | 0.126 | -0.275 |
| | [0.032] | [0.086] | [0.108] | [0.055] | [0.151] | [0.198] |
| Secretary Stud. | 0.006 | 0.109 | -0.083 | -0.088 | -0.232 | -0.466 |
| | [0.025] | [0.075] | [0.097] | [0.081] | [0.226] | [0.315] |
| Law | 0.293** | 0.465 | -0.149 | -0.838*** | 0.176 | 0.160 |
| | [0.123] | [0.411] | [0.385] | [0.147] | [0.434] | [0.539] |
| Other Social Sci | 0.534*** | 0.203 | -0.080 | -0.850*** | 0.922*** | 0.077 |
| | [0.038] | [0.141] | [0.147] | [0.057] | [0.214] | [0.225] |
| Agricultural & Bio Sci | | | | | | |
| Agriculture Sci | 0.469*** | -0.346 | -0.381 | 0.435*** | 0.015 | -0.081 |
| | [0.071] | [0.223] | [0.298] | [0.069] | [0.185] | [0.256] |
| Other Life Sci | 0.035 | -0.173 | 0.443 | -0.305* | 0.345 | -0.289 |
| | [0.152] | [0.424] | [0.465] | [0.164] | [0.470] | [0.576] |
| Home Ec. | 0.447*** | -0.086 | -0.041 | 0.490*** | -0.030 | -0.338 |
| | [0.061] | [0.139] | [0.226] | [0.085] | [0.206] | [0.287] |
| Fisheries | 0.584*** | 0.030 | -0.904 | -0.058 | -0.221 | -1.020** |
| | [0.218] | [0.590] | [0.804] | [0.115] | [0.294] | [0.470] |
| Eng. & Applied Science | | | | | | |
| Forestry | 0.408** | -1.066 | 1.166 | -0.501*** | 0.035 | -0.157 |
| | [0.204] | [1.110] | [1.111] | [0.086] | [0.421] | [0.368] |
| Landscape Arch | 0.189 | -0.509 | -0.080 | -0.404*** | 0.055 | -0.141 |
| | [0.123] | [0.359] | [0.452] | [0.077] | [0.244] | [0.243] |
| Health Science | | | | | | |
| Nursing | -0.535*** | 0.454*** | 0.127 | -0.721*** | -0.131 | 0.427 |
| | [0.027] | [0.076] | [0.105] | [0.091] | [0.243] | [0.332] |
| Medical Assist. | 0.461*** | 0.279** | -0.198 | 0.251** | -0.516 | -0.221 |
| | [0.037] | [0.113] | [0.156] | [0.109] | [0.316] | [0.401] |
| Public Health | -0.465*** | 0.349 | -0.323 | -0.734*** | 0.373 | 0.240 |
| | [0.078] | [0.362] | [0.340] | [0.161] | [0.542] | [0.626] |
| Medical Techn. | -0.272*** | 0.389*** | 0.129 | -0.506*** | 0.228 | -0.365 |
| | [0.036] | [0.121] | [0.135] | [0.070] | [0.207] | [0.252] |
| Natural Science | | | | | | |
| Chemistry | -0.403* | 0.236 | -0.365 | -0.953*** | 0.738** | -0.489 |
| | [0.217] | [0.360] | [0.511] | [0.137] | [0.309] | [0.406] |
| Physics | -0.062 | 0.358 | 0.212 | -0.182 | -0.171 | -0.902 |
| | [0.616] | [1.008] | [1.886] | [0.311] | [0.588] | [0.910] |
| Earth Science | 0.055 | -0.035 | -1.408 | -0.740*** | 0.464 | -0.990** |
| | [0.248] | [0.679] | [0.964] | [0.121] | [0.342] | [0.475] |
| Other Science | -0.449*** | 0.762*** | 0.157 | -0.282*** | 0.210 | -0.707** |
| | [0.082] | [0.225] | [0.284] | [0.100] | [0.286] | [0.319] |
| Trades & Technology | | | | | | |
| Building Tech. | 0.089 | -0.393 | -0.410 | -0.751*** | 0.495*** | -0.320 |
| | [0.119] | [0.263] | [0.341] | [0.061] | [0.167] | [0.219] |
| Trades | 0.572*** | -0.288 | 0.148 | -0.252*** | 0.117 | -0.357* |
| | [0.097] | [0.233] | [0.303] | [0.052] | [0.145] | [0.192] |
| Electronics Tech | 0.344*** | 0.033 | -0.406*** | -0.665*** | 0.347** | -0.258 |
| | [0.040] | [0.114] | [0.131] | [0.050] | [0.142] | [0.185] |
| Environ. Tech | 0.115 | 1.294 | -0.204 | -0.884*** | 0.411 | 0.181 |
| | [0.190] | [0.796] | [0.775] | [0.090] | [0.306] | [0.369] |
| Mechanic | 0.427*** | -0.161 | 0.198 | -0.517*** | 0.132 | -0.267 |
| | [0.124] | [0.318] | [0.469] | [0.052] | [0.144] | [0.194] |
| Transport Tech | 0.666*** | -0.703*** | -0.554 | -0.758*** | 0.277* | -0.195 |
| | [0.118] | [0.265] | [0.405] | [0.061] | [0.157] | [0.210] |
| Observations | | 266146 | | | 190273 | |
| R-squared | | 0.035 | | | 0.074 | |

Source: 1996 Canadian Census

Notes: Heteroskedastic consistent standard errors in brackets. Significance Level: * 10%; ** 5%; *** 1%

Also included in the regression are 9 province of residence indicators, 23 census metropolitan area indicators, 3 census area indicators for BC, ON, and PQ. and a fourth order polynomial in age.

APPENDIX TABLE 9 - 1996 MASTERS: GOVERNMENTAL TRANSFERS

| | Female | | | Male | | |
|---|---|---|---|---|---|---|
| Variable | Cdn Born | Foreign Educ | Cdn Educ | Cdn Born | Foreign Educ | Cdn Educ |
| Immigrant | 3.792*** | -0.822 | -0.148 | 4.878*** | -0.295 | -0.243 |
| | [0.122] | [2.560] | [0.201] | [0.118] | [1.349] | [0.181] |
| Fine & Applied Arts | | | | | | |
| Fine Arts | 1.231*** | -0.822*** | -0.330 | 2.036*** | -1.768*** | 0.231 |
| | [0.105] | [0.215] | [0.274] | [0.116] | [0.246] | [0.317] |
| Lit. & Humanities | | | | | | |
| History | 0.644*** | -0.330 | -0.028 | 0.994*** | -0.381 | -0.035 |
| | [0.151] | [0.272] | [0.321] | [0.108] | [0.258] | [0.271] |
| Media Studies | 0.429*** | -0.516** | 0.007 | 1.092*** | -1.585*** | 0.117 |
| | [0.077] | [0.213] | [0.214] | [0.116] | [0.293] | [0.324] |
| English | 0.617*** | -0.658*** | -0.073 | 0.952*** | -0.535* | 0.131 |
| | [0.118] | [0.224] | [0.258] | [0.128] | [0.293] | [0.318] |
| French | 0.838*** | -1.397*** | -0.136 | 0.598** | -0.068 | 0.396 |
| | [0.184] | [0.428] | [0.462] | [0.267] | [0.579] | [0.695] |
| Other Literature | 0.854*** | -0.716*** | -0.388 | 1.115*** | -1.214*** | -0.278 |
| | [0.141] | [0.221] | [0.260] | [0.179] | [0.318] | [0.345] |
| Philosophy | 1.686*** | -1.181*** | -1.008*** | 2.404*** | -1.261*** | -0.370* |
| | [0.100] | [0.279] | [0.316] | [0.067] | [0.177] | [0.205] |
| Other Humanities | 0.927*** | -0.651* | -0.319 | 1.430*** | -0.735* | -0.437 |
| | [0.141] | [0.360] | [0.381] | [0.172] | [0.424] | [0.449] |
| Social Science | | | | | | |
| Economics | 0.078 | -0.445* | -0.233 | -0.161* | 0.388** | 0.731*** |
| | [0.158] | [0.248] | [0.343] | [0.090] | [0.188] | [0.237] |
| Geography | 0.392*** | -0.666** | -0.284 | 0.107 | -0.187 | 0.304 |
| | [0.126] | [0.325] | [0.341] | [0.095] | [0.277] | [0.281] |
| Political Science | 0.332** | -0.186 | -0.219 | 0.476*** | 0.254 | 0.314 |
| | [0.162] | [0.326] | [0.383] | [0.120] | [0.286] | [0.303] |
| Psychology | 0.376*** | 0.106 | 0.426* | 0.555*** | -0.310 | 0.342 |
| | [0.080] | [0.216] | [0.241] | [0.096] | [0.310] | [0.284] |
| Sociology Crim | 0.356** | -0.794*** | -0.173 | 0.517*** | 0.099 | 0.754* |
| | [0.140] | [0.304] | [0.355] | [0.135] | [0.383] | [0.386] |
| Public Admin | -0.231** | 0.200 | -0.170 | -0.244*** | 0.098 | 0.106 |
| | [0.096] | [0.301] | [0.296] | [0.077] | [0.254] | [0.279] |
| Commerce | -0.191** | 0.122 | -0.128 | -0.208*** | -0.130 | 0.356** |
| | [0.080] | [0.205] | [0.207] | [0.055] | [0.146] | [0.151] |
| Finance | -0.115 | 0.326 | 0.159 | -0.170** | -0.174 | 0.302 |
| | [0.147] | [0.258] | [0.322] | [0.084] | [0.183] | [0.229] |
| Marketing | -0.374* | -0.698 | 0.673 | -0.080 | -0.216 | 0.509 |
| | [0.220] | [0.571] | [0.546] | [0.158] | [0.381] | [0.440] |
| Law | -0.168 | 0.263 | -0.044 | -0.030 | -0.063 | 0.602** |
| | [0.138] | [0.302] | [0.373] | [0.091] | [0.243] | [0.259] |
| Other Soc Sci | 0.276*** | -0.310 | 0.015 | 0.289*** | -0.287 | 0.292 |
| | [0.073] | [0.203] | [0.208] | [0.100] | [0.271] | [0.294] |
| Agri. & Bio Science | | | | | | |
| Agricultural Sci | 0.310 | -0.576 | 0.868 | 0.738*** | -0.118 | 0.044 |
| | [0.279] | [0.435] | [0.660] | [0.161] | [0.297] | [0.492] |
| Biological Sci | 0.125 | 0.054 | 0.064 | 0.402*** | -0.336 | 0.507 |
| | [0.132] | [0.255] | [0.307] | [0.118] | [0.309] | [0.324] |
| Other Life Sci | 0.145 | -0.725** | 0.186 | 0.105 | 0.420 | 1.096** |
| | [0.168] | [0.299] | [0.425] | [0.189] | [0.366] | [0.495] |
| Eng. & Applied Sci | | | | | | |
| Architecture | 0.524* | -0.562 | 0.568 | 0.976*** | -1.066*** | 0.361 |
| | [0.272] | [0.415] | [0.720] | [0.156] | [0.259] | [0.372] |
| Other Engineering | 0.126 | -0.388 | 0.398 | -0.270*** | -0.346** | 0.576*** |
| | [0.208] | [0.307] | [0.536] | [0.083] | [0.154] | [0.182] |
| Chemical Eng | -1.292*** | 1.658*** | 2.296*** | -0.414** | -0.553* | 0.536 |
| | [0.459] | [0.617] | [0.779] | [0.185] | [0.289] | [0.372] |
| Civil Engineering | 0.305 | -0.262 | -0.792 | -0.220* | -0.173 | 0.275 |
| | [0.377] | [0.485] | [0.694] | [0.114] | [0.190] | [0.267] |
| Electrical Eng | -0.846* | 0.884 | 0.305 | -0.077 | -1.005*** | -0.090 |
| | [0.482] | [0.561] | [0.891] | [0.121] | [0.190] | [0.241] |
| Mechanical Eng | -0.398 | 0.346 | -0.760 | -0.176 | -0.383* | 0.767*** |
| | [0.448] | [0.528] | [1.014] | [0.140] | [0.200] | [0.266] |
| Forestry | 0.751 | -2.485** | -0.533 | -0.087 | -0.325 | 0.459 |
| | [0.501] | [1.247] | [1.560] | [0.223] | [0.497] | [0.606] |
| Health Science | | | | | | |
| Medicine | -0.172 | -0.277 | 0.077 | -0.340*** | -0.604*** | 0.053 |
| | [0.134] | [0.242] | [0.302] | [0.103] | [0.212] | [0.240] |
| Other Health | -0.142* | 0.107 | 0.035 | 0.266 | -0.675* | 0.725 |
| | [0.075] | [0.199] | [0.225] | [0.196] | [0.388] | [0.487] |
| Natural Science | | | | | | |
| Mathematics | -0.268 | -0.473 | -0.361 | 0.124 | -0.766*** | 0.717** |
| | [0.233] | [0.329] | [0.477] | [0.131] | [0.250] | [0.294] |
| Computer Science | -0.333 | -0.356 | -0.103 | 0.008 | -0.994*** | -0.128 |
| | [0.264] | [0.347] | [0.466] | [0.129] | [0.207] | [0.264] |
| Chemistry | -0.339 | -0.266 | 0.145 | 0.148 | -0.269 | 0.329 |
| | [0.269] | [0.352] | [0.509] | [0.173] | [0.283] | [0.378] |
| Physical Science | -0.095 | -0.731 | -0.697 | 0.006 | -0.565** | 0.538 |
| | [0.520] | [0.636] | [0.935] | [0.165] | [0.285] | [0.351] |
| Earth Science | 0.564** | -1.144*** | -0.443 | 0.037 | 0.040 | 0.768** |
| | [0.249] | [0.438] | [0.692] | [0.130] | [0.261] | [0.313] |
| Other Science | -0.094 | 0.503 | 0.160 | 0.339* | -0.982** | 0.292 |
| | [0.267] | [0.457] | [0.535] | [0.197] | [0.393] | [0.458] |
| Observations | | 30253 | | | 44963 | |
| R-squared | | 0.090 | | | 0.182 | |

Source: 1996 Canadian Census

Notes: Heteroskedastic consistent standard errors in brackets. Significance Level: * 10%; ** 5%; *** 1%
Also included in the regression are 9 province of residence indicators, 23 census metropolitan area indicators, 3 census area indicators for BC, ON, and PQ, and a fourth order polynomial in age.

APPENDIX TABLE 10

*Predicted UI receipt ($)*

*Workers and non-workers*

1996 CANADIAN CENSUS - FEMALES

| | Canadian Born | | | Foreign Educ Immigrants | | | Cdn Educ Immigrants | | |
|---|---|---|---|---|---|---|---|---|---|
| Field | College | Bachelor | Master's | College | Bachelor | Master's | College | Bachelor | Master's |
| Education | | | | | | | | | |
| Education | 645 | 606 | 546 | 482 | 589 | 532 | 642 | 685 | 567 |
| Fine & AppliedArts | | | | | | | | | |
| FineArt | 463 | 504 | 826 | 403 | 518 | 589 | 469 | 694 | 535 |
| Literature & Humanities | | | | | | | | | |
| History | | 421 | 612 | | 621 | 383 | | 698 | 536 |
| Media | 561 | 566 | 590 | 543 | 487 | 504 | 429 | 609 | 466 |
| English | - | 488 | 611 | - | 492 | 524 | - | 553 | 737 |
| French | - | 464 | 896 | - | 506 | 489 | - | 729 | 510 |
| Other Literature | 488 | 522 | 646 | 453 | 517 | 417 | 478 | 829 | 484 |
| Philosophy Theology | 479 | 464 | 452 | 286 | 442 | 515 | 499 | 613 | 584 |
| Other Humanities | 608 | 468 | 639 | 368 | 582 | 379 | 655 | 660 | 1519 |
| Social Science | | | | | | | | | |
| Economics | 646 | 453 | 363 | 482 | 520 | 392 | 282 | 563 | 645 |
| Geography | 525 | 443 | 605 | - | 608 | 371 | - | 619 | - |
| Political Science | - | 416 | 674 | - | 501 | 687 | - | 802 | 324 |
| Psychology | 614 | 520 | 545 | 386 | 474 | 393 | 567 | 631 | 660 |
| Sociology Criminology | 486 | 516 | 517 | 1102 | 516 | 566 | 962 | 705 | 641 |
| Specialized Admin. | 520 | 402 | 396 | 449 | 505 | 319 | 577 | 723 | 536 |
| Commerce | 506 | 390 | 387 | 490 | 462 | 322 | 496 | 569 | 368 |
| Finance | 571 | 402 | 337 | 524 | 599 | 487 | 559 | 685 | 379 |
| Secretarial Studies | 544 | | | 458 | | | 543 | | |
| Marketing | - | 355 | 429 | - | 573 | - | - | - | 534 |
| Law | 596 | 324 | 436 | 331 | 452 | 517 | 498 | 733 | 422 |
| Other Social Science | 594 | 535 | 529 | 584 | 483 | 410 | 571 | 843 | 731 |
| Agricultural & BioScience | | | | | | | | | |
| Agriculture | 587 | 427 | 650 | 353 | 749 | 449 | 459 | 620 | - |
| Biology | | 510 | 660 | | 443 | 298 | | 717 | 456 |
| Other Life Science | 526 | 460 | 497 | 1231 | 534 | 618 | 820 | 593 | 1541 |
| Household Science | 576 | | | 532 | | | 548 | | |
| Fish Wildlife Manage | 810 | | | 543 | | | 471 | | |
| Engineer&Applied Science | | | | | | | | | |
| Architecture | | 557 | - | | 405 | 507 | | 634 | - |
| Other Engineering | - | 436 | 531 | - | 426 | 381 | - | 733 | - |
| Chemical Engineering | | 491 | - | | 964 | 368 | | 1037 | - |
| Civil Engineering | | 388 | - | | 684 | 461 | | 1446 | - |
| Electrical Engineering | | 309 | - | | 702 | 397 | | 310 | - |
| Mechanical Engineer | | 524 | - | | 723 | 407 | | - | - |
| Forestry | 983 | 523 | - | - | - | - | - | - | - |
| Landscape Architect | 459 | | | 652 | | | 1449 | | |
| Health Professions | | | | | | | | | |
| Medicine | | 359 | 373 | | 400 | 287 | | 703 | 275 |
| Other Health | | | 557 | | | 484 | | | 615 |
| Nursing | 448 | 500 | | 416 | 482 | | 452 | 587 | |
| Medical Assistant | 511 | | | 476 | | | 434 | | |
| Public Health | 729 | 487 | | 888 | - | | 448 | - | |
| Rehab. Medicine | - | - | - | - | - | - | - | - | - |
| Medical Technician | 501 | 407 | | 581 | 438 | | 498 | 611 | |
| Math & Physical Sciences | | | | | | | | | |
| Mathematics | | 462 | 541 | | 455 | 305 | | 599 | 510 |
| Computer Science | | 333 | - | | 539 | 298 | | 491 | 873 |
| Chemistry | 454 | 381 | - | 461 | 561 | 358 | 352 | 935 | 593 |
| Physics | - | - | - | - | 642 | 449 | - | - | - |
| Earth Science | 518 | 338 | 768 | - | 460 | 328 | - | 559 | - |
| Other Science | 448 | 435 | 550 | 505 | 487 | 869 | 462 | 725 | 702 |
| Other | | | | | | | | | |
| Trades | 685 | - | | 697 | 278 | - | 350 | - | |
| Electronic Technology | 603 | | | 533 | | | 521 | | |
| Environment Tech | 957 | | | 281 | | | - | | |
| Mechanic | 720 | | | 679 | | | 410 | | |
| Transport Technology | 596 | | | 441 | | | 407 | | |

Source: 1996 Canadian Census. Dashes imply that the cell contents are suppressed for reasons of confidentiality.

APPENDIX TABLE 11

*Predicted UI receipt ($)*

*Workers and non-workers*

1996 CANADIAN CENSUS - MALES

| Field | Canadian Born |  |  | Foreign Educ Immigrants |  |  | Cdn Educ Immigrants |  |  |
|---|---|---|---|---|---|---|---|---|---|
|  | College | Bachelor | Master's | College | Bachelor | Master's | College | Bachelor | Master's |
| Education |  |  |  |  |  |  |  |  |  |
| Education | 591 | 382 | 267 | 575 | 376 | 383 | 480 | 399 | 225 |
| Fine & AppliedArts |  |  |  |  |  |  |  |  |  |
| FineArt | 561 | 578 | 508 | 549 | 489 | 321 | 470 | 501 | 336 |
| Literature & Humanities |  |  |  |  |  |  |  |  |  |
| History |  | 375 | 307 |  | 426 | 302 |  | 478 | 440 |
| Media | 492 | 433 | 340 | 556 | 405 | 297 | 392 | 499 | 321 |
| English | - | 423 | 343 | - | 392 | 354 | - | 591 | 228 |
| French | - | - | - | - | - | - | - | - | - |
| Other Literature | 589 | 368 | 330 | 684 | 545 | 363 | - | 510 | 312 |
| Philosophy Theology | 524 | 384 | 264 | 388 | 313 | 302 | 721 | 465 | 340 |
| Other Humanities | 469 | 465 | 516 | 964 | 636 | 378 | 593 | 485 | 516 |
| Social Science |  |  |  |  |  |  |  |  |  |
| Economics | 468 | 310 | 252 | 582 | 335 | 347 | 498 | 365 | 296 |
| Geography | 508 | 398 | 357 | 513 | 320 | 328 | - | 436 | 287 |
| Political Science | 678 | 318 | 298 | - | 407 | 229 | - | 365 | 350 |
| Psychology | 636 | 417 | 277 | - | 511 | 198 | 601 | 438 | 297 |
| Sociology Criminology | 360 | 368 | 326 | 584 | 307 | 1542 | 383 | 369 | 876 |
| Specialized Admin. | 521 | 292 | 239 | 537 | 346 | 339 | 474 | 413 | 308 |
| Commerce | 435 | 285 | 239 | 436 | 288 | 287 | 452 | 384 | 254 |
| Finance | 430 | 261 | 229 | 499 | 316 | 225 | 430 | 348 | 238 |
| Secretarial Studies | 531 |  |  | 552 |  |  | 451 |  |  |
| Marketing |  | 285 | 205 |  | 303 | 276 |  | 316 | 290 |
| Law | 371 | 249 | 220 | 468 | 370 | 228 | 407 | 321 | 235 |
| Other Social Science | 399 | 386 | 258 | 610 | 407 | 310 | 404 | 353 | 304 |
| Agricultural & BioScience |  |  |  |  |  |  |  |  |  |
| Agriculture | 486 | 269 | 243 | 477 | 376 | 217 | 469 | 372 | 251 |
| Biology |  | 354 | 313 |  | 441 | 297 |  | 464 | 416 |
| Other Life Science | 449 | 347 | 244 | 639 | 478 | 269 | 531 | 409 | 257 |
| Household Science | 789 |  |  | 618 |  |  | 597 |  |  |
| Fish Wildlife Manage | 1208 |  |  | 511 |  |  | 447 |  |  |
| Engineer&Applied Science |  |  |  |  |  |  |  |  |  |
| Architecture |  | 423 | 337 |  | 439 | 227 |  | 487 | 233 |
| Other Engineering |  | 275 | 219 | - | 343 | 250 | - | 340 | 261 |
| Chemical Engineering |  | 241 | 185 |  | 293 | 284 |  | 302 | 282 |
| Civil Engineering |  | 312 | 231 |  | 393 | 287 |  | 349 | 268 |
| Electrical Engineering |  | 223 | 236 |  | 319 | 230 |  | 345 | 233 |
| Mechanical Engineer |  | 256 | 210 |  | 361 | 298 |  | 319 | 217 |
| Forestry | 935 | 318 | 212 | 781 | 315 | 305 | 604 | 336 - |  |
| Landscape Architect | 585 |  |  | 694 |  |  | 600 |  |  |
| Health Professions |  |  |  |  |  |  |  |  |  |
| Medicine |  | 255 | 219 |  | 281 | 209 |  | 251 | 213 |
| Other Health |  |  | 248 |  |  | 294 |  |  | 369 |
| Nursing | 358 | 265 |  | 379 | 223 |  | 366 | 459 |  |
| Medical Assistant | 513 |  |  | 501 |  |  | 557 |  |  |
| Public Health | 454 - |  |  | 570 - |  |  | 706 - |  |  |
| Rehab. Medicine | - | - | - | - | - | - | - | - | - |
| Medical Technician | 383 | 280 |  | 478 | 331 |  | 375 | 513 |  |
| Math & Physical Sciences |  |  |  |  |  |  |  |  |  |
| Mathematics |  | 303 | 280 |  | 375 | 433 |  | 339 | 267 |
| Computer Science |  | 229 | 210 |  | 319 | 212 |  | 333 | 276 |
| Chemistry | 348 | 327 | 231 | 657 | 340 | 235 | 430 | 341 | 219 |
| Physics | - | 301 | 262 | 313 | 416 | 261 | - | 346 | 278 |
| Earth Science | 468 | 325 | 249 | 427 | 393 | 244 | 459 | 313 | 295 |
| Other Science | 454 | 340 | 279 | 510 | 458 | 324 | 736 | 418 | 314 |
| Other |  |  |  |  |  |  |  |  |  |
| Trades | 829 | 465 - |  | 638 | 320 - |  | 705 - |  | - |
| Electronic Technology | 411 |  |  | 505 |  |  | 463 |  |  |
| Environment Tech | 654 |  |  | 804 |  |  | 485 |  |  |
| Mechanic | 528 |  |  | 566 |  |  | 471 |  |  |
| Transport Technology | 612 |  |  | 551 |  |  | 471 |  |  |

Source: 1996 Canadian Census. Dashes imply that the cell contents are suppressed for reasons of confidentiality.

APPENDIX TABLE 12

*Predicted Gov. Transfers($)*

*Workers and non-workers*

1996 CANADIAN CENSUS - FEMALES

| | Canadian Born | | | Foreign Educ Immigrants | | | Canadian Educ Immigrants | | |
|---|---|---|---|---|---|---|---|---|---|
| Field | College | Bachelor | Master's | College | Bachelor | Master's | College | Bachelor | Master's |
| Education | | | | | | | | | |
| Education | 515 | 187 | 164 | 287 | 126 | 143 | 294 | 132 | 114 |
| Fine & AppliedArts | | | | | | | | | |
| FineArt | 763 | 467 | 561 | 394 | 150 | 215 | 551 | 271 | 281 |
| Literature & Humanities | | | | | | | | | |
| History | | 287 | 312 | | 145 | 195 | | 181 | 211 |
| Media | 716 | 302 | 252 | 243 | 164 | 131 | 582 | 195 | 177 |
| English | - | 267 | 304 | - | 134 | 137 | - | 179 | 197 |
| French | - | 276 | 379 | - | 146 | 82 | - | 120 | 231 |
| Other Literature | 896 | 285 | 385 | 523 | 118 | 164 | 541 | 164 | 182 |
| Philosophy Theology | 570 | 383 | 885 | 304 | 133 | 236 | 285 | 186 | 225 |
| Other Humanities | 1535 | 376 | 414 | 408 | 167 | 188 | 877 | 220 | 210 |
| Social Science | | | | | | | | | |
| Economics | 1305 | 196 | 177 | 276 | 173 | 99 | 218 | 198 | 98 |
| Geography | 678 | 232 | 243 | - | 151 | 108 | - | 160 | - |
| Political Science | - | 295 | 229 | - | 147 | 165 | - | 156 | 128 |
| Psychology | 1116 | 284 | 239 | 410 | 184 | 231 | 472 | 201 | 255 |
| Sociology Criminology | 689 | 319 | 234 | 458 | 212 | 92 | 313 | 235 | 137 |
| Specialized Admin. | 531 | 167 | 130 | 346 | 144 | 138 | 259 | 134 | 76 |
| Commerce | 547 | 174 | 135 | 326 | 152 | 133 | 280 | 131 | 83 |
| Finance | 570 | 129 | 146 | 270 | 126 | 176 | 267 | 117 | 119 |
| Secretarial Studies | 519 | | | 322 | | | 273 | | |
| Marketing | - | 185 | 113 | - | 148 | - | - | - | 154 |
| Law | 691 | 173 | 139 | 612 | 161 | 157 | 340 | 122 | 92 |
| Other Social Science | 879 | 312 | 216 | 599 | 194 | 138 | 463 | 209 | 153 |
| Agricultural & BioScience | | | | | | | | | |
| Agriculture | 824 | 214 | 224 | 325 | 170 | 109 | 322 | 114 | - |
| Biology | | 233 | 186 | | 108 | 171 | | 131 | 138 |
| Other Life Science | 534 | 158 | 190 | 250 | 147 | 80 | 475 | 152 | 159 |
| Household Science | 806 | | | 412 | | | 442 | | |
| Fish Wildlife Manage | 924 | | | 530 | | | 214 | | |
| Engineer&Applied Science | | | | | | | | | |
| Architecture | | 272 | - | | 100 | 137 | | 183 | - |
| Other Engineering | - | 161 | 186 | - | 131 | 110 | - | 140 | - |
| Chemical Engineering | | 103 | - | | 82 | 206 | | 109 | - |
| Civil Engineering | | 126 | - | | 103 | 149 | | 78 | - |
| Electrical Engineering | | 88 | - | | 148 | 148 | | 65 | - |
| Mechanical Engineer | | 134 | - | | 146 | 135 | | - | - |
| Forestry | 776 | 123 | - | - | - | - | - | - | - |
| Landscape Architect | 623 | | | 209 | | | 329 | | |
| Health Professions | | | | | | | | | |
| Medicine | | 93 | 138 | | 96 | 91 | | 59 | 104 |
| Other Health | | | 142 | | | 138 | | | 103 |
| Nursing | 302 | 147 | | 265 | 111 | | 196 | 116 | |
| Medical Assistant | 818 | | | 602 | | | 383 | | |
| Public Health | 324 | 152 | | 256 | - | | 134 | - | |
| Rehab. Medicine | - | - | - | - | - | - | - | - | - |
| Medical Technician | 393 | 181 | | 323 | 171 | | 255 | 113 | |
| Math & Physical Sciences | | | | | | | | | |
| Mathematics | | 134 | 125 | | 121 | 68 | | 112 | 61 |
| Computer Science | | 127 | - | | 92 | 72 | | 76 | 74 |
| Chemistry | 344 | 164 | - | 243 | 88 | 78 | 137 | 159 | 94 |
| Physics | - | - | - | - | 109 | 62 | - | - | - |
| Earth Science | 544 | 211 | 288 | - | 88 | 80 | - | 87 | - |
| Other Science | 329 | 190 | 149 | 392 | 138 | 215 | 220 | 140 | 122 |
| Other | | | | | | | | | |
| Trades | 913 | - | | 381 | 179 | - | 604 | - | |
| Electronic Technology | 727 | | | 418 | | | 277 | | |
| Environment Tech | 578 | | | 1175 | | | - | | |
| Mechanic | 790 | | | 375 | | | 550 | | |
| Transport Technology | 1004 | | | 277 | | | 329 | | |

Source: 1996 Canadian Census. Dashes imply that the cell contents are suppressed for reasons of confidentiality.

APPENDIX TABLE 13

*Predicted Gov. Transfers($)*

*Workers and non-workers*

1996 CANADIAN CENSUS - MALES

| Field | Canadian Born |  |  | Foreign Educ Immigrants |  |  | Cdn Educ Immigrants |  |  |
|---|---|---|---|---|---|---|---|---|---|
|  | College | Bachelor | Master's | College | Bachelor | Master's | College | Bachelor | Master's |
| Education |  |  |  |  |  |  |  |  |  |
| Education | 857 | 284 | 188 | 907 | 426 | 355 | 1268 | 547 | 189 |
| Fine & AppliedArts |  |  |  |  |  |  |  |  |  |
| FineArt | 1263 | 1268 | 1439 | 1375 | 915 | 464 | 1165 | 1613 | 1827 |
| Literature & Humanities |  |  |  |  |  |  |  |  |  |
| History |  | 498 | 508 |  | 602 | 656 |  | 1066 | 494 |
| Media | 868 | 517 | 560 | 1203 | 803 | 217 | 1412 | 1519 | 634 |
| English | - | 665 | 487 | - | 678 | 539 | - | 1095 | 560 |
| French | - | - | - | - | - | - | - | - | - |
| Other Literature | 1796 | 558 | 573 | 915 | 850 | 322 | - | 1174 | 438 |
| Philosophy Theology | 1345 | 1151 | 2079 | 1877 | 681 | 1113 | 2310 | 1530 | 1448 |
| Other Humanities | 1253 | 707 | 785 | 2308 | 1129 | 712 | 2903 | 1097 | 512 |
| Social Science |  |  |  |  |  |  |  |  |  |
| Economics | 552 | 268 | 160 | 1206 | 369 | 446 | 1006 | 591 | 335 |
| Geography | 553 | 369 | 209 | 519 | 372 | 328 | - | 533 | 286 |
| Political Science | 906 | 374 | 302 | - | 659 | 737 | - | 675 | 417 |
| Psychology | 1171 | 453 | 327 | - | 616 | 454 | 423 | 889 | 464 |
| Sociology Criminology | 409 | 372 | 315 | 1163 | 675 | 657 | 320 | 1150 | 675 |
| Specialized Admin. | 615 | 198 | 147 | 690 | 372 | 307 | 720 | 439 | 165 |
| Commerce | 483 | 211 | 153 | 747 | 476 | 253 | 607 | 578 | 220 |
| Finance | 525 | 182 | 159 | 630 | 335 | 252 | 590 | 420 | 216 |
| Secretarial Studies | 785 |  |  | 659 |  |  | 730 |  |  |
| Marketing |  | 232 | 174 |  | 500 | 264 |  | 433 | 291 |
| Law | 371 | 134 | 182 | 468 | 408 | 324 | 644 | 314 | 336 |
| Other Social Science | 366 | 483 | 251 | 975 | 721 | 356 | 586 | 1895 | 339 |
| Agricultural & BioScience |  |  |  |  |  |  |  |  |  |
| Agriculture | 1323 | 448 | 393 | 1422 | 722 | 660 | 1806 | 843 | 414 |
| Biology |  | 357 | 281 |  | 593 | 379 |  | 520 | 470 |
| Other Life Science | 632 | 502 | 209 | 944 | 484 | 600 | 701 | 1749 | 630 |
| Household Science | 1399 |  |  | 1437 |  |  | 1478 |  |  |
| Fish Wildlife Manage | 808 |  |  | 686 |  |  | 431 |  |  |
| Engineer&Applied Science |  |  |  |  |  |  |  |  |  |
| Architecture |  | 433 | 499 |  | 551 | 325 |  | 1143 | 721 |
| Other Engineering | - | 144 | 143 | - | 252 | 192 | - | 327 | 257 |
| Chemical Engineering |  | 94 | 124 |  | 245 | 135 |  | 234 | 214 |
| Civil Engineering |  | 131 | 151 |  | 345 | 240 |  | 293 | 200 |
| Electrical Engineering |  | 117 | 174 |  | 286 | 120 |  | 274 | 160 |
| Mechanical Engineer |  | 127 | 158 |  | 316 | 203 |  | 305 | 342 |
| Forestry | 519 | 156 | 172 | 569 | 656 | 235 | 657 | 303 | - |
| Landscape Architect | 572 |  |  | 640 |  |  | 736 |  |  |
| Health Professions |  |  |  |  |  |  |  |  |  |
| Medicine |  | 110 | 134 |  | 194 | 138 |  | 158 | 142 |
| Other Health |  |  | 245 |  |  | 236 |  |  | 510 |
| Nursing | 417 | 262 |  | 387 | 472 |  | 945 | 353 |  |
| Medical Assistant | 1101 |  |  | 696 |  |  | 1307 |  |  |
| Public Health | 411 | - |  | 632 | - |  | 774 | - |  |
| Rehab. Medicine | - | - | - | - | - | - | - | - | - |
| Medical Technician | 517 | 442 |  | 687 | 288 |  | 531 | 880 |  |
| Math & Physical Sciences |  |  |  |  |  |  |  |  |  |
| Mathematics |  | 204 | 213 |  | 450 | 187 |  | 435 | 440 |
| Computer Science |  | 149 | 189 |  | 174 | 132 |  | 304 | 168 |
| Chemistry | 330 | 224 | 218 | 732 | 444 | 315 | 300 | 411 | 305 |
| Physics | - | 282 | 189 | 637 | 493 | 203 | - | 617 | 326 |
| Earth Science | 409 | 196 | 195 | 688 | 387 | 384 | 225 | 592 | 424 |
| Other Science | 646 | 254 | 264 | 844 | 711 | 187 | 472 | 624 | 356 |
| Other |  |  |  |  |  |  |  |  |  |
| Trades | 666 | 106 | - | 792 | 994 | - | 690 | - | - |
| Electronic Technology | 441 |  |  | 660 |  |  | 504 |  |  |
| Environment Tech | 354 |  |  | 565 |  |  | 628 |  |  |
| Mechanic | 511 |  |  | 617 |  |  | 579 |  |  |
| Building Technology | 404 |  |  | 702 |  |  | 435 |  |  |
| Transport Technology | 401 |  |  | 560 |  |  | 489 |  |  |
| Other Fields | 529 | 302 | 843 | 770 | 398 | 177 | 660 | 779 | 514 |

Source: 1996 Canadian Census. Dashes imply that the cell contents are suppressed for reasons of confidentiality.

## *References:*

Baker, Michael, and Dwayne Benjamin. 1994. "The Performance of Immigrants in the Canadian Labor Market." *Journal of Labor Economics.* Vol. 12, No. 3, pp. 369-405.

Baker, M. and D. Benjamin. 1995. "The Receipt of Transfer Payments by Immigrants to Canada", *Journal of Human Resources.* 30(4): 650-76.

Benjamin, D., M. Gunderson and W.C. Riddell. 1998. *Labour Market Economics: Theory, Evidence and Policy in Canada, 4th ed.*, McGraw-Hill, Ryerson.

Bloom, D.E., G. Grenier and M. Gunderson. 1995. "The Changing Labor Market Position of Canadian Immigrants." *Canadian Journal of Economics.* Vol. 28, No. 4, pp. 987-1005.

Borjas, G.J. 1993. "Immigration Policy, National Origin and Immigrant Skills: A Comparison of Canada and the United States." in *Small Differences that Matter: Labor Markets and Income Maintenance in Canada and the United States*, edited by D. Card and R. Freeman. Chicago: University of Chicago Press.

Borjas, G.J. 1985. "Assimilation, Change in Cohort Quality, and the Earnings of Immigrants." *Journal of Labor Economics.* Vol. 3, No. 4, pp. 463-89.

Borjas, G.J. 1994. "The Economics of Immigration." *Journal of Economic Literature.* Vol. 32, No. 4, pp. 1667-1717.

Borjas, G.J. 1995. "Assimilation and Changes in Cohort Quality Revisited: What Happened to Immigrant Earnings in the 1980s?" *Journal of Labor Economics.* 13(2) pp. 201-45.

Chiswick, B.R. 1978. "The Effect of Americanization on the Earnings of Foreign-Born Men." *Journal of Political Economy.* Vol. 86, No. 5, pp. 897-921.

Côté, Sylvain and Arthur Sweetman. "Does It Matter What I Study? Post-Secondary Field of Study and Labour Market Outcomes in Canada" WRNET (UBC) working paper.

Crossley, Thomas F., James Ted McDonald and Christopher Worswick. 2001. "Immigrant Benefit Receipt: Sensitivity to the Choice of Survey Years and Model Specification" *Journal of Human Resources.* 36(2): 379-97.

Duan, N. 1983. "Smearing estimate: a nonparametric retransformation method." *Journal of the American Statistical Association.* 78:605-610.

Grant, Mary L. 1999. "Evidence of New Immigrant Assimilation in Canada." *Canadian Journal of Economics.* Vol. 32, No. 4. pp. 930-955.

Green, Alan G. and David E. Green. 1995. "Canadian Immigration Policy: the Effectiveness of the Point system and Other Instruments." *Canadian Journal of Economics.* Vol. 38, No. 4b, pp. 1006-41.

Finnie, Ross. 2001. "Fields of Plenty, Fields of Lean: the early labour market outcomes of Canadian university graduates by discipline." *The Canadian Journal of Higher Education*. 21(1):141-76.

Ferrer, A, and W.C. Riddell. 2002. "Educational Credential and Immigrant Assimilation." University of British Columbia, mimeo.

McDonald, J. and C. Worswick. 1998. "The Earnings of Immigrant Men in Canada: Job Tenure, Cohort and Macroeconomic Conditions." *Industrial and Labor Relations Review*. Vol. 51, No. 3, pp. 465-482.

Li, Peter S. 2001. "The market worth of immigrants' educational credentials." *Canadian Public Policy*. Vol. 27, No. 1, pp. 23-38.

Schaafsma, Joseph, and Arthur Sweetman. 2001. "Immigrant Earnings: Age at Immigration Matters." *Canadian Journal of Economics*. 34(4): 1066-99.

Sweetman, Arthur. 2001. "Immigrants and Employment Insurance" in *Essays on the Repeat Use of Unemployment Insurance*, eds. Saul Schwartz and Abdurrahman Aydemir. Ottawa: Social Research and Demonstration Corporation.

# *ANALYTICAL STUDIES RESEARCH PAPER SERIES*

*No. 1* *Behavioural Response in the Context of Socio-Economic Microanalytic Simulation,* ***Lars Osberg (April 1986)***

*No. 2* *Unemployment and Training,* ***Garnett Picot (1987)***

*No. 3* *Homemaker Pensions and Lifetime Redistribution,* ***Michael Wolfson (August 1987)***

*No. 4* *Modeling the Lifetime Employment Patterns of Canadians,* ***Garnett Picot (Winter 1986)***

*No. 5* *Job Loss and Labour Market Adjustment in the Canadian Economy,* ***Garnett Picot and Ted Wannell (1987)***

*No. 6* *A System of Health Statistics: Toward a New Conceptual Framework for Integrating Health Data,* ***Michael C. Wolfson (March 1990)***

*No. 7* *A Prototype Micro-Macro Link for the Canadian Household Sector,* ***Hans J. Adler and Michael C. Wolfson (August 1987)***

*No. 8* *Notes on Corporate Concentration and Canada's Income Tax,* ***Michael C. Wolfson (October 1987)***

*No. 9* *The Expanding Middle: Some Canadian Evidence on the Deskilling Debate,* ***John Myles (Fall 1987)***

*No. 10* *The Rise of the Conglomerate Economy,* ***Jorge Niosi (1987)***

*No. 11* *Energy Analysis of Canadian External Trade: 1971 and 1976,* ***K.E. Hamilton (1988)***

*No. 12* *Net and Gross Rates of Land Concentration,* ***Ray D. Bollman and Philip Ehrensaft (1988)***

*No. 13* *Cause-Deleted Life Tables for Canada (1972 to 1981): An Approach Towards Analyzing Epidemiological Transition,* ***Dhruva Nagnur and Michael Nagrodski (November 1987)***

*No. 14* *The Distribution of the Frequency of Occurrence of Nucleotide Subsequences, Based on Their Overlap Capability,* ***Jane F. Gentleman and Ronald C. Mullin (1988)***

*No. 15* *Immigration and the Ethnolinguistic Character of Canada and Quebec,* ***Réjean Lachapelle (1988)***

*No. 16* *Integration of Canadian Farm and Off-Farm Markets and the Off-Farm Work of Women, Men and Children,* ***Ray D. Bollman and Pamela Smith (1988)***

*No. 17* *Wages and Jobs in the 1980s: Changing Youth Wages and the Declining Middle,* ***J. Myles, G. Picot and T. Wannell (July 1988)***

*No. 18* *A Profile of Farmers with Computers,* ***Ray D. Bollman (September 1988)***

*No. 19* *Mortality Risk Distributions: A Life Table Analysis,* ***Geoff Rowe (July 1988)***

*No. 20* *Industrial Classification in the Canadian Census of Manufactures: Automated Verification Using Product Data,* ***John S. Crysdale (January 1989)***

*No. 21* *Consumption, Income and Retirement,* ***A.L. Robb and J.B. Burbridge (1989)***

No. 22 *Job Turnover in Canada's Manufacturing Sector,* ***John R. Baldwin and Paul K. Gorecki (Summer 1989)***

No. 23 *Series on The Dynamics of the Competitive Process,* ***John R. Baldwin and Paul K. Gorecki (1990)***

A. *Firm Entry and Exit Within the Canadian Manufacturing Sector.*
B. *Intra-Industry Mobility in the Canadian Manufacturing Sector.*
C. *Measuring Entry and Exit in Canadian Manufacturing: Methodology.*
D. *The Contribution of the Competitive Process to Productivity Growth: The Role of Firm and Plant Turnover.*
E. *Mergers and the Competitive Process.*
F. *n/a*
G. *Concentration Statistics as Predictors of the Intensity of Competition.*
H. *The Relationship Between Mobility and Concentration for the Canadian Manufacturing Sector.*

No. 24 *Mainframe SAS Enhancements in Support of Exploratory Data Analysis,* ***Richard Johnson, Jane F. Gentleman and Monica Tomiak (1989)***

No. 25 *Dimensions of Labour Market Change in Canada: Intersectoral Shifts, Job and Worker Turnover,* ***John R. Baldwin and Paul K. Gorecki (1989)***

No. 26 *The Persistent Gap: Exploring the Earnings Differential Between Recent Male and Female Postsecondary Graduates,* ***Ted Wannell (1989)***

No. 27 *Estimating Agricultural Soil Erosion Losses From Census of Agriculture Crop Coverage Data,* ***Douglas F. Trant (1989)***

No. 28 *Good Jobs/Bad Jobs and the Declining Middle: 1967-1986,* ***Garnett Picot, John Myles, Ted Wannel (1990)***

No. 29 *Longitudinal Career Data for Selected Cohorts of Men and Women in the Public Service, 1978-1987,* ***Garnett Picot and Ted Wannell (1990)***

No. 30 *Earnings and Death-Effects Over a Quarter Century,* ***Michael Wolfson, Geoff Rowe, Jane F. Gentleman and Monica Tomiak (1990)***

No. 31 *Firm Response to Price Uncertainty: Tripartite Stabilization and the Western Canadian Cattle Industry,* ***Theodore M. Horbulyk (1990)***

No. 32 *Smoothing Procedures for Simulated Longitudinal Microdata,* ***Jane F. Gentleman,Dale Robertson and Monica Tomiak (1990)***

No. 33 *Patterns of Canadian Foreign Direct Investment Abroad,* ***Paul K. Gorecki (1990)***

No. 34 *POHEM - A New Approach to the Estimation of Health Status Adjusted Life Expectancy,* ***Michael C. Wolfson (1991)***

No. 35 *Canadian Jobs and Firm Size: Do Smaller Firms Pay Less?,* ***René Morissette (1991)***

No. 36 *Distinguishing Characteristics of Foreign High Technology Acquisitions in Canada's Manufacturing Sector,* ***John R. Baldwin and Paul K. Gorecki (1991)***

No. 37 *Industry Efficiency and Plant Turnover in the Canadian Manufacturing Sector,* ***John R. Baldwin (1991)***

No. 38 *When the Baby Boom Grows Old: Impacts on Canada's Public Sector,* ***Brian B. Murphy and Michael C. Wolfson (1991)***

No. 39 *Trends in the Distribution of Employment by Employer Size: Recent Canadian Evidence,* ***Ted Wannell (1991)***

No. 40 *Small Communities in Atlantic Canada: Their Industrial Structure and Labour Market Conditions in the Early 1980s*, **Garnett Picot and John Heath (1991)**

No. 41 *The Distribution of Federal/Provincial Taxes and Transfers in Rural Canada*, **Brian B. Murphy (1991)**

No. 42 *Foreign Multinational Enterprises and Merger Activity in Canada*, **John Baldwin and Richard Caves (1992)**

No. 43 *Repeat Users of the Unemployment Insurance Program*, **Miles Corak (1992)**

No. 44 *POHEM -- A Framework for Understanding and Modeling the Health of Human Populations*, **Michael C. Wolfson (1992)**

No. 45 *A Review of Models of Population Health Expectancy: A Micro-Simulation Perspective*, **Michael C. Wolfson and Kenneth G. Manton (1992)**

No. 46 *Career Earnings and Death: A Longitudinal Analysis of Older Canadian Men*, **Michael C. Wolfson, Geoff Rowe, Jane Gentleman and Monica Tomiak (1992)**

No. 47 *Longitudinal Patterns in the Duration of Unemployment Insurance Claims in Canada*, **Miles Corak (1992)**

No. 48 *The Dynamics of Firm Turnover and the Competitive Process*, **John Baldwin (1992)**

No. 49 *Development of Longitudinal Panel Data from Business Registers: Canadian Experience*, **John Baldwin, Richard Dupuy and William Penner (1992)**

No. 50 *The Calculation of Health-Adjusted Life Expectancy for a Canadian Province Using a Multi-Attribute Utility Function: A First Attempt*, **J.-M. Berthelot, R. Roberge and M.C. Wolfson (1992)**

No. 51 *Testing the Robustness of Entry Barriers*, **J.R. Baldwin and M. Rafiquzzaman (1993)**

No. 52 *Canada's Multinationals: Their Characteristics and Determinants*, **Paul K. Gorecki (1992)**

No. 53 *The Persistence of Unemployment: How Important were Regional Extended Unemployment Insurance Benefits?*, **Miles Corak, Stephen Jones (1993)**

No. 54 *Cyclical Variation in the Duration of Unemployment Spells*, **Miles Corak (1992)**

No. 55 *Permanent Layoffs and Displaced Workers: Cyclical Sensitivity, Concentration, and Experience Following the Layoff*, **Garnett Picot and Wendy Pyper (1993)**

No. 56 *The Duration of Unemployment During Boom and Bust*, **Miles Corak (1993)**

No. 57 *Getting a New Job in 1989-90 in Canada*, **René Morissette (1993)**

No. 58 *Linking Survey and Administrative Data to Study Determinants of Health*, **P. David, J.-M. Berthelot and C. Mustard (1993)**

No. 59 *Extending Historical Comparability in Industrial Classification*, **John S. Crysdale (1993)**

No. 60 *What is Happening to Earnings Inequality in Canada?*, **R. Morissette, J. Myles and G. Picot (June 1994)**

No. 61 *Structural Change in the Canadian Manufacturing Sector, (1970-1990),* ***J. Baldwin and M. Rafiquzzaman (July 1994)***

No. 62 *Unemployment Insurance, Work Disincentives, and the Canadian Labour Market: An Overview,* ***Miles Corak (January 1994)***

No. 63 *Recent Youth Labour Market Experiences in Canada,* ***Gordon Betcherman and René Morissette (July 1994)***

No. 64 *A Comparison of Job Creation and Job Destruction in Canada and the United States,* ***John Baldwin, Timothy Dunne and John Haltiwanger (July 1994)***

No. 65 *What is Happening to Weekly Hours Worked in Canada?,* ***René Morissette and Deborah Sunter (June 1994)***

No. 66 *Divergent Inequalities -- Theory, Empirical Results and Prescriptions,* ***Michael C. Wolfson (May 1995)***

No. 67 *XEcon: An Experimental / Evolutionary Model of Economic Growth,* ***Michael C. Wolfson (June 1995)***

No. 68 *The Gender Earnings Gap Among Recent Postsecondary Graduates, 1984-92,* ***Ted Wannell and Nathalie Caron (November 1994)***

No. 69 *A Look at Employment-Equity Groups Among Recent Postsecondary Graduates: Visible Minorities, Aboriginal Peoples and the Activity Limited,* ***Ted Wannell and Nathalie Caron (November 1994)***

No. 70 *Employment Generation by Small Producers in the Canadian Manufacturing Sector,* ***John R. Baldwin and Garnett Picot (November 1994)***

No. 71 *Have Small Firms Created a Disproportionate Share of New Jobs in Canada? A Reassessment of the Facts,* ***Garnett Picot, John Baldwin and Richard Dupuy (November 1994)***

No. 72 *Selection Versus Evolutionary Adaptation: Learning and Post-Entry Performance,* ***J. Baldwin and M. Rafiquzzaman (May 1995)***

No. 73 *Business Strategies in Innovative and Non-Innovative Firms in Canada,* ***J. Baldwin and J. Johnson (February 1995)***

No. 74 *Human Capital Development and Innovation: The Case of Training in Small and Medium Sized-Firms,* ***J. Baldwin and J. Johnson (March 1995)***

No. 75 *Technology Use and Industrial Transformation: Emprirical Perspectives,* ***John Baldwin, Brent Diverty and David Sabourin (August 1995)***

No. 76 *Innovation: The Key to Success in Small Firms,* ***John R. Baldwin (February 1995)***

No. 77 *The Missing Link: Data on the Demand side of Labour Markets,* ***Lars Osberg (April 1995)***

No. 78 *Restructuring in the Canadian Manufacturing Sector from 1970 to 1990: Industry and Regional Dimensions of Job Turnover,* ***J. Baldwin and M. Rafiquzzaman (July 1995)***

No. 79 *Human Capital and the Use of Time,* ***Frank Jones (June 1995)***

No. 80 *Why Has Inequality in Weekly Earnings Increased in Canada?,* ***René Morissette (July 1995)***

No. 81 *Socio-Economic Statistics and Public Policy: A New Role For Microsimulation Modeling,* ***Michael C. Wolfson (July 1995)***

No. 82 *Social Transfers, Changing Family Structure, and Low Income Among Children,* ***Garnett Picot and John Myles (September 1995)***

No. 83 *Alternative Measures of the Average Duration of Unemployment,* ***Miles Corak and Andrew Heisz (October 1995)***

No. 84 *The Duration of Unemployment: A User Guide,* ***Miles Corak and Andrew Heisz (December 1995)***

No. 85 *Advanced Technology Use in Manufacturing Establishments,* ***John R. Baldwin and Brent Diverty (November 1995)***

No. 86 *Technology Use, Training and Plant-Specific Knowledge in Manufacturing Establishments,* ***John R. Baldwin, Tara Gray and Joanne Johnson (December 1995)***

No. 87 *Productivity Growth, Plant Turnover and Restructuring in the Canadian Manufacturing Sector,* ***John R. Baldwin (November 1995)***

No. 88 *Were Small Producers the Engines of Growth in the Canadian Manufacturing Sector in the 1980s?,* ***John R. Baldwin (October 1996)***

No. 89 *The Intergenerational Income Mobility of Canadian Men,* ***Miles Corak and Andrew Heisz (January 1996)***

No. 90 *The Evolution of Payroll Taxes in Canada: 1961 - 1993,* ***Zhengxi Lin, Garnett Picot and Charles Beach (February 1996)***

No. 91 *Project on Matching Census 1986 Database and Manitoba Health Care Files: Private Households Component,* ***Christian Houle, Jean-Marie Berthelot, Pierre David, Cam Mustard, L. Roos and M.C. Wolfson (March 1996)***

No. 92 *Technology-induced Wage Premia in Canadian Manufacturing Plants during the 1980s,* ***John Baldwin, Tara Gray and Joanne Johnson (December 1996)***

No. 93 *Job Creation by Company Size Class: Concentration and Persistence of Job Gains and Losses in Canadian Companies,* ***Garnett Picot and Richard Dupuy (April 1996)***

No. 94 *Longitudinal Aspects of Earnings Inequality in Canada,* ***René Morissette and Charles Bérubé (July 1996)***

No. 95 *Changes in Job Tenure and Job Stability in Canada,* ***Andrew Heisz (November 1996)***

No. 96 *Are Canadians More Likely to Lose Their Jobs in the 1990s?,* ***Garnett Picot and Zhengxi Lin (August 6, 1997)***

No. 97 *Unemployment in the Stock and Flow,* ***Michael Baker, Miles Corak and Andrew Heisz (September 1996)***

No. 98 *The Effect of Technology and Trade on Wage Differentials Between Nonproduction and Production Workers in Canadian Manufacturing,* ***John R. Baldwin and Mohammed Rafiquzzaman (May 1998)***

No. 99 *Use of POHEM to Estimate Direct Medical Costs of Current Practice and New Treatments Associated with Lung Cancer in Canada,* ***C. Houle, B.P. Will, J.-M. Berthelot, Dr. W.K. Evans (May 1997)***

No.100 *An Experimental Canadian Survey That Links Workplace Practices and Employee Outcomes: Why it is Needed and How it Works,* ***Garnett Picot, Ted Wannell (May 1997)***

No.101 *Innovative Activity in Canadian Food Processing Establishments: The Importance of Engineering Practices,* ***John Baldwin and David Sabourin (November 1999)***

No. 102 *Differences in Strategies and Performances of Different Types of Innovators,* **John R. Baldwin and Joanne Johnson (December 1997)**

No.103 *Permanent Layoffs in Canada: Overview and Longitudinal Analysis,* **Garnett Picot, Zhengxi Lin and Wendy Pyper (September, 1997)**

No.104 *Working More? Working Less? What do Canadian Workers Prefer?,* **Marie Drolet and René Morissette (May 20, 1997)**

No.105 *Growth of Advanced Technology Use in Canadian Manufacturing During the 1990's,* **by John Baldwin, Ed Rama and David Sabourin (December 14, 1999)**

No.106 *Job Turnover and Labour Market Adjustment in Ontario from 1978 to 1993,* **by Zhengxi Lin and Wendy Pyper (1997)**

No.107 *The Importance of Research and Development for Innovation in Small and Large Canadian Manufacturing Firms,* **John R. Baldwin (September 24, 1997)**

No.108 *International Competition and Industrial Performance: Allocative Efficiency, Productive Efficiency, and Turbulence,* **John R. Baldwin and Richard E. Caves (October 1997)**

No.109 *The Dimensions of Wage Inequality among Aboriginal Peoples,* **Rachel Bernier (December 1997)**

No.110 *Trickling Down or Fizzling Out? Economic Performance, Transfers, Inequality and Low Income,* **Myles Zyblock and Zhengxi Lin (December 10, 1997)**

No.111 *Corporate Financial Leverage: A Canada - U.S. Comparison, 1961-1996,* **Myles Zyblock (December 1997)**

No.112 *An explanation of the Increasing Age Premium,* **Constantine Kapsalis (July 1998)**

No.113 *The Intergenerational Earnings and Income Mobility of Canadian Men: Evidence from Longitudinal Income Tax Data,* **Miles Corak and Andrew Heisz (October, 1998)**

No.114 *Foreign-Born vs Native-Born Canadians: A Comparison of Their Inter-Provincial Labour Mobility,* **Zhengxi Lin (September 1998)**

No.115 *Living Arrangements and Residential Overcrowding: the situation of older immigrants in Canada, 1991,* **K.G. Basavarajappa (September 1998)**

No.116 *What is Happening to Earnings Inequality and Youth Wages in the 1990s?,* **Garnett Picot (July 1998)**

No 117 *The Determinants of the Adoption Lag for Advanced Manufacturing Technologies,* **John R. Baldwin and Mohammed Rafiquzzaman (August 1998)**

No. 118 *Labour Productivity Differences Between Domestic and Foreign-Controlled Establishments in the Canadian Manufacturing Sector,* **John R. Baldwin and Naginder Dhaliwal (March 1, 2000)**

No.119 *Technology Adoption: A Comparison Between Canada and the United States,* **John R. Baldwin and David Sabourin (August 1998)**

No.120 *Are There High-Tech Industries or Only High-Tech Firms? Evidence From New Technology-Based firms,* **John R. Baldwin and Guy Gellatly (December 1998)**

No.121 *A Portrait of Entrants and Exits,* **John R. Baldwin (June 1999)**

No.122 *Determinants of Innovative Activity in Canadian Manufacturing Firms: The Role of Intellectual Property Right,* **John R. Baldwin, Petr Hanel and David Sabourin (March 7, 2000)**

*No.123 Innovation and Training in New Firms* **John R. Baldwin (November 2000)**

*No.124 New Views on Inequality Trends in Canada and the United States,* **Michael C. Wolfson and Brian B. Murphy (August 1998 and October 1999 (paper)**

*No.125 Employment Insurance in Canada: Recent Trends and Policy Changes,* **Zhengxi Lin (September 1998)**

*No.126 Computers, Fax Machines and Wages in Canada: What Really Matters?,* **René Morissette and Marie Drolet (October 1998)**

*No.127 Understanding the Innovation Process: Innovation in Dynamic Service Industries,* **Guy Gellatly and Valerie Peters (December 1999)**

*No.128 Recent Canadian Evidence on Job Quality by Firm Size,* **Marie Drolet and René Morissette (November 1998)**

*No.129 Distribution, Inequality and Concentration of Income Among Older Immigrants in Canada, 1990 ,* **K.G Basavarajappa (April 1999)**

*No.130 Earnings Dynamics and Inequality among Canadian Men, 1976-1992: Evidence from Longitudinal Income Tax Records,* **Michael Baker and Gary Solon (February 1999)**

*No 131 The Returns to Education, and the Increasing Wage Gap Between Younger and Older Workers,* **C. Kapsalis, R. Morissette and G. Picot (March 1999)**

*No.132 Why Do Children Move Into and Out of Low Income: Changing Labour Market Conditions or Marriage and Divorce?,* **G. Picot, M. Zyblock and W. Pyper (March 1999)**

*No.133 Rising Self-Employment in the Midst of High Unemployment: An Empirical Analysis of Recent Developments in Canada,* **Zhengxi Lin, Janice Yates and Garnett Picot (March 1999)**

*No.134 The Entry and Exit Dynamics of Self-Employment in Canada,* **Zhengxi Lin, Garnett Picot and Janice Yates (March 1999)**

*No.135 Death and Divorce: The Long-term Consequences of Parental Loss on Adolescents,* **Miles Corak (June 9, 1999)**

*No.136* **Cancelled**

*No.137 Innovation, Training and Success,* **John Baldwin (October 1999)**

*No.138 The Evolution of Pension Coverage of Young and Older Workers in Canada,* **René Morissette and Marie Drolet (December 1999)**

*No.139 Import Competition and Market Power: Canadian Evidence,* **Aileen J. Thompson (April 2000)**

*No.140 Gender Composition and Wages: Why is Canada Different from the United States,* **Michael Baker and Nicole Fortin (August 2000)**

*No.141 The Transition to Work for Canadian University Graduates: Time to First Job, 1982-1990,* **Julian Betts, Christopher Ferrall and Ross Finnie (December 2000)**

No.142 *Who Moves? A Panel Logit Model Analysis of Interprovincial Migration in Canada,* **Ross Finnie (August 2000)**

No.143 *Differences in Innovator and Non-Innovator Profiles: Small Establishments in Business Services,* **Guy Gellatly (December 1999)**

No.144 *Social Transfers, Earnings and Low-Income Intensity Among Canadian Children, 1981-1996: Highlighting Recent Development in Low-Income Measurement,* **John Myles and Garnett Picot (March 2000)**

No.145 *How Much of Canada's Unemployment is Structural?,* **Lars Osberg and Zhengxi Lin (October 2000)**

No.146 *To What Extent Are Canadians Exposed to Low-Income?,* **René Morissette and Marie Drolet (April, 2000)**

No.147 *The Maturation of Canada's Retirement Income System: Income Levels, Income Inequality and Low-Income among the Elderly,* **John Myles (March 6, 2000)**

No.148 *The Performance of the 1990s Canadian Labour Market,* **Garnett Picot and Andrew Heisz (April, 2000)**

No.149 *Payroll Taxes in Canada Revisited: Structure, Statutory Parameters, and Recent Trends* **Zhengxi Lin (August, 2001)**

No.150 *Patterns of Corporate Diversification in Canada: An Empirical Analysis,* **John R. Baldwin, Desmond Beckstead,Guy Gellatly and Alice Peters (June, 2000)**

No.151 *Multinationals and the Canadian Innovation Process,* **John R. Baldwin and Petr Hanel (June, 2000)**

No.152 *Rural Youth: Stayers, Leavers and Return Migrants,* **Richard Dupuy, Francine Mayer and René Morissette (September 5, 2000)**

No.153 *Female Employment Rates and Labour Market Attachment in Rural Canada,* **Euan Phimster, Esperanza Vera Toscano, Alfons Weersink (December 2000)**

No.154 *Training as a Human Resource Strategy: The Response to Staff Shortages and Technological Change,* **John R. Baldwin and Valerie Peters (April 2001)**

No.155 *Job Tenure, Worker Mobility and the Youth Labour Market during the 1990s,* **G. Picot, A. Heisz and A. Nakamura (March 2001)**

No.156 *The Impact of International Trade on the Wages of Canadians,* **Omar Zakhilwal (December 2000)**

No.157 *The Persistent Gap: New Evidence on the Canadian Gender Wage Gap,* **Marie Drolet (December 2000)**

No.158 *In Search of Intergenerational Credit Constraints Among Canadian Men: Quantile Versus Mean Regression Tests for Binding Crefdit Constraints,* **Nathan D. Grawe (December 2000)**

No.159 *Intergenerational Influences on the Receipt of Unemployment Insurance in Canada and Sweden,* **Miles Corak, Bjorn Gustaffson and Torun Osterberg (December 2000)**

No.160 *Neighbourhood Inequality in Canadian Cities,* **John Myles, Garnett Picot and Wendy Pyper (December 13, 2000)**

No.161 ***Cancelled***

No.162 *The Evolution of Job Stability in Canada: Trends and Comparisons to U.S. Results,* **Andrew Heisz (October 16, 2002)**

No.163 *The Effects of Inter-Provincial Mobility on Individuals' Earnings: Panel Model Estimates for Canada,* **Ross Finnie (October, 2001)**

No.164 *Early Labour Market Outcomes of Recent Canadian University Graduates by Discipline: A Longitudinal, Cross-Cohort Analysis,* ***Ross Finnie (March 2002)***

No.165 *Innovation and Connectivity: The Nature of Market Linkages and Innovation Networks in Canadian Manufacturing Industries,* ***John Baldwin and Alice Peters (May 2001)***

No.166 *An Assessment of EI and SA Reporting in SLID,* ***Constantine Kapsalis (August, 2001)***

No.167 ***Cancelled***

No.168 *Enhancing Food Safety and Productivity: Technology Use in the Canadian Food Processing Industry,* ***John R. Baldwin and David Sabourin (May 2002)***

No.169 *Dynamics of the Canadian Manufacturing Sector in Metropolitan and Rural Regions,* ***John R. Baldwin and Mark Brown with Tara Vinodrai (November 2001)***

No170 *Income Prospects of British Columbia University Graduates,* ***Andrew Heisz (May 2001)***

No.171 *Are the Kids All Right? Intergenerational Mobility and Child Well-being in Canada,* ***Miles Corak (October 2001)***

No.172 *Low-Income Intensity During the 1990s: The Role of Economic Growth, Employment Earnings and Social Transfers,* ***G. Picot, R. Morissette, J. Myles (January 24, 2003)***

No.173 *Impediments to Advanced Technology Adoption for Canadian Manufacturers,* ***John Baldwin and Zhengxi Lin (August, 2001)***

No.174 *Impact of the Adoption of Advanced Information and Communication Technologies on Firm Performance in the Canadian Manufacturing Sector,* ***John R. Baldwin and David Sabourin (October, 2001)***

No.175 *Skill Shortages and Advanced Technology Adoption,* ***David Sabourin (September, 2001)***

No.176 *Which Firms Have High Job Vacancy Rates in Canada?,* ***René Morissette, Xuelin Zhang (October 25, 2001)***

No.177 *A Tale of Three Cities: The Dynamics of Manufacturing in Toronto, Montreal and Vancouver, 1976-1997,* ***Tara Vinodrai (November 2001)***

No.178 *School Performance of the Children of Immigrants in Canada, 1994-98,* ***Christopher Worswick (November 14, 2001)***

No.179 *Changes in the Diversification of Canadian Manufacturing Firms (1973-1997): A Move to Specialization,* ***John R. Baldwin, Desmond Beckstead and Richard Caves (February 2002)***

No.180 *Differences in Interprovincial Productivity Levels,* ***John R. Baldwin, Jean-Pierre Maynard, David Sabourin and Danielle Zietsma (December 2001)***

No.181 *Does Parent or Child Know Best? An Assessment of Parent/Child Agreement in the Canadian National Longitudinal Survey of Children and Youth,* ***Lori Curtis, Martin Dooley and Shelley Phipps*** *(October 23, 2002)*

No.182 *Effects of Selection Criteria and Economic Opportunities on the Characteristics of Immigrants,* ***by Abdurrahman Aydemir*** *(October 23, 2002)*

No.183 *Setting up Shop: Self-Employment Amongst Canadian College and University Graduates,* **Ross Finnie, Christine Laporte, Maud-Catherine Rivard (March 2002)**

No.184 *Winners and Losers in the Labour Market of the 1990s,* **Andrew Heisz, Andrew Jackson, Garnett Picot (February 2002)**

No.185 *Do Neighbourhoods Influence Long Term Labour Market Success? A Comparison of Adults who Grew Up in Different Public Housing Projects,* **Philip Oreopoulos (June 2002)**

No.186 *Wives, Mothers and Wages: Does Timing Matter?* **Marie Drolet (May 1, 2002)**

No.187 *The Evolution of Wealth Inequality in Canada, 1984-1999,* **René Morissette, Xuelin Zhang and Marie Drolet (February 2002)**

No.188 *Management Experience and Diversity in an Aging Organization,* **Ted Wannell and Martin Gravel (August 2002)**

No.189 *The Importance of Entry to Canadian Manufacturing with an Appendix on Measurement Issues,* **John Baldwin, Desmond Beckstead and Andrée Girard (May 2002)**

No.190 *Financing Innovation in New Small Firms : Evidence From Canada,* **John R,. Baldwin, Guy Gellatly and Valérie Gaudreault (May 2002)**

No.191 *Too Far to Go On? Distance to School and University Participation,* **Marc Frenette (June 24, 2002)**

No.192 *Life After Welfare: The Economic Well-Being of Welfare Leavers in Canada during the 1990s,* **Marc Frenette, Garnet Picot (March 26, 2003)**

No.193 *Plant Turnover and Productivity Growth in Canadian Manufacuturing,* **John Baldwin, Wulong Gu (April 2, 2003)**

No.194 *Wage Progression of Less Skilled Workers in Canada: Evidence from the SLID (1993-1998),* **Xuelin Zhang (December 6, 2002)**

No.195 *Do the Falling Earnings of Immigrants Apply to Self-Employed Immigrants?,* **Marc Frenette (December 2002)**

No.196 *Minorities, Cognitive Skills and the Incomes of Canadians,* **Ross Finnie and Ronald Meng (January 24, 2003)**

No.197 *The Wealth Position of Immigrant Families in Canada,* **Xuelin Zhang (November 18, 2003)**

No.198 *The Rise in Low-Income Rates Among Immigrants in Canada,* **Garnett Picot and Feng Hou (June 19, 2003)**

No.199 *Alternative Work Practices and Quit Rates: Methodological Issues and Empirical Evidence For Canada,* **René Morissette and Julio Miguel Rosa (March 17, 2003)**

No.200 *Cohort Effects in Annual Earnings by Field of Study Among British Columbia University Graduates,* **Andrew Heisz (September 26, 2003)**

No.201 *Access to College and University: Does Distance Matter?,* **Marc Frenette (June 2003)**

No.202 *Learning From Failure: Organizational Mortality and the Resource-Based View,* **S. Thornhill and R. Amit (August 8, 2003)**

No.203 *Effects of Business Cycles on the Labour Market Assimilation of Immigrants,* **Abdurrahman Aydemir (July 31, 2003)**

*No.204 Visible Minority Neighbourhood Enclaves and Labour Market Outcomes of Immigrants,* ***Garnett Picot, Feng Hou (July 9, 2003)***

*No.205 Changing Trade Barriers and Canadian Firms: Survival and Exit After the Canada-U.S. Free Trade Agreement,* ***Jen Baggs (April 28, 2004)***

*No.206 Neighbourhood Attainment and Residential Segregation Among Toronto's Visible Minorities,* ***John Myles and Feng Hou (July 30, 2003)***

*No.207 Life cycle bias in the estimation of intergenerational earnings persistence,* ***Nathan Grawe (August 5, 2003)***

*No.208* ***forthcoming***

*No.209 Working Hours in Canada and the United States,* ***Andrew Heisz and Sébastien LaRochelle-Côté (September 2003)***

*No.210 Family Income and Participation in Post-Secondary Education,* ***Miles Corak, Garth Lipps and John Zhao (October 1, 2003)***

*No.211-214 forthcoming*

*No.215 Will They Ever Converge?: Earnings of Immigrant and Canadian-Born Workers over the Last Two Decades,* ***Marc Frenette and René Morissette (October 8, 2003)***

*No.216 How long do people live in low-income neighbourhoods?* ***Marc Frenette Garnett Picot and Roger Sceviour (January 2004)***

*No.217 Corporate Financial Leverage in Canadian Manufacturing: Consequences for Employment and Inventories,* ***Andrew Heisz and Sébastien LaRochelle-Côté (February 2004)***

*No.218 Have Permanent Layoff Rates Increased in Canada?* ***René Morissette (March 25, 2004)***

*No.219 Rising income inequality amid the economic recovery of the 1990s: An exploration of three data sources,* ***Marc Frenette, David Green and Garnett Picot (July 9, 2004)***

*No.220 Factors Determining the Success or Failure of Canadian Establishments on Foreign Markets: A Survival Analysis Approach,* ***Jean Bosco Sabuhoro and Yvan Gervais (May 5, 2004)***

*No.221 Recent immigration and the formation of visible minority neighbourhoods in Canada's large cities,* ***Feng Hou (July 2, 2004)***

*No.222 The Deteriorating Economic Welfare of Immigrants and Possible Causes,* ***Garnett Picot (July 15, 2004)***

*No.223 The Retirement Plans and Expectations of Non-Retired Canadians Aged 45-59,* ***Grant Schellenberg (June 29, 2004)***

*No.224 Public Transit Use Among Immigrants,* ***Andrew Heisz, Grant Schellenberg (May 13, 2004)***

*No.225 Explaining the Deteriorating Entry Earnings of Canada's Immigrant Cohorts: 1966-2000,* ***by Abdurrahman Aydemir and Mikal Skuterud (May 17, 2004)***

No.226 *Family Background and Access to Post Secondary Education: What Happened over the 1990s?* , **Ross Finnie, Christine Laporte and Eric Lascelles (August 18, 2004)**

No.227 *A Longitudinal Analysis of Earnings Change in Canada* , **Charles M. Beach and Ross Finnie (August 20, 2004)**

No.228 *Neighbourhood Inequality, Relative Deprivation and Self-perceived Health Status,* **Feng Hou and John Myles (September 27, 2004)**

No.229 *Population Movement Into and Out of Canada's Immigrant Gateway Cities: A Comparative Study of Toronto, Montreal and Vancouver,* **Feng Hou and Larry S. Bourne (September 13, 2004)**

No.230 *Earnings of Couples with High and Low Levels of Education, 1980-2000,* **René Morissette et Anick Johnson (October 13, 2004)**

No.231 *Welfare Dynamics in Canada: The Role of Individual Attributes and Economic-Policy Variables,* **Ross Finnie, Ian Irvine and Roger Sceviour (October 2004)**

No.232 *Relative Wage Patterns among the Highly Educated in a Knowledge-based Economy,* **René Morissette, Yuri Ostrovsky and Garnett Picot (September 29, 2004)**

No.233 *Postsecondary Field of Study and the Canadian Labour Market Outcomes of Immigrants and Non-Immigrants,* **Arthur Sweetman and Stephan McBride (October 28, 2004)**